Identity formation in adolescence and young adulthood

van Doeselaar, C.

Publication date:
2020

Document Version
Publisher's PDF, also known as Version of record

IDENTITY FORMATION IN ADOLESCENCE AND YOUNG ADULTHOOD:

BRINGING TOGETHER DIFFERENT PIECES OF THE PUZZLE

LOTTE VAN DOESELAAR

Identity Formation in Adolescence and Young Adulthood: Bringing Together Different Pieces of the Puzzle

Lotte van Doeselaar

This work was supported by a grant of the Dutch Research Council (NWO),
grant number 452–14-013.

ISBN 978-94-028-1852-9

Printed by Ipskamp Printing

Identity Formation in Adolescence and Young Adulthood: Bringing Together Different Pieces of the Puzzle

Proefschrift

ter verkrijging van de graad van doctor aan Tilburg University

op gezag van de rector magnificus, prof. dr. K. Sijtsma,

in het openbaar te verdedigen ten overstaan van een door het college voor

promoties aangewezen commissie in de Aula van de Universiteit

op vrijdag 7 februari 2020 om 13.30 uur

door

Charlotte van Doeselaar

geboren op 17 januari 1991 te Helmond

Promotiecommissie

Promotores:	Prof. dr. J.J.A. Denissen
	Prof. dr. W.H.J. Meeus
Copromotor:	Dr. T.A. Klimstra
Overige leden:	Dr. B.G. Adams
	Dr. E.S. Kunnen
	Dr. K. Luyckx
	Prof dr. I. Seiffge-Krenke
	Prof. dr. S. Thomaes

TABLE OF CONTENTS

CHAPTER 1 –

General Introduction

'Who am I?' From adolescence onwards, individuals are expected to become increasingly engaged in answering this question in order to establish their own personal identity (Erikson, 1950). Until adolescence, children mostly directly adopt identifications (e.g., views on future roles in life) from significant others around them. It is in adolescence that individuals generally start to question these childhood identifications. This increased engagement in identity formation is likely triggered by the many changes young people are experiencing, such as personal changes during puberty and changes in the relationship with their parents as they acquire more independence. Moreover, identity formation is likely stimulated by the various choices that adolescents and young adults in Western societies are expected to make in identity-relevant domains. For example, they are expected to choose an educational path, occupation, friends, and romantic partner. Together with cognitive advances (Habermas & Reese, 2015; Harter, 2012), all these changes and choices might stimulate adolescents' and young adults' search for their own personal identity.

Personal identity refers to a broad and complex concept. Since Erikson (1950) formulated his theory on identity as the key developmental task of adolescence, it has repeatedly been pointed out that the most used conceptualizations of identity do not provide the full picture (e.g., Côte & Levine, 1988; Pasupathi, 2014; Van Hoof, 1999; Waterman, 1988). Existing empirical work can be divided into separate approaches that use different conceptualizations of personal identity. That is, studies have focused on different components of adaptive personal identity and on different conceptualizations of the developmental process of personal identity formation. These approaches have only scarcely been integrated with each other (Crocetti & Salmela-Aro, 2018; McLean & Syed, 2015a; Pasupathi, 2014). It seems like groups of researchers are predominantly working on parallel parts of the identity puzzle and are less focused on bringing these pieces together. This is unfortunate because the different approaches can likely inform each other, and integrating them would likely advance the understanding of personal identity development in adolescence and young adulthood (Pasupathi, 2014). Therefore, the current thesis is aimed at improving the conceptualization of personal identity by studying and integrating different conceptualizations. Moreover, the aim is to examine the developments of different components of personal identity and to examine what the correlates, predictors and possible outcomes are of these components.

CONCEPTUALIZATIONS OF PERSONAL IDENTITY

The concept of identity can roughly be divided into two levels: social identity and personal identity (e.g., Brewer, 1991; Tajfel & Turner, 1979; Vignoles, Schwartz, & Luyckx, 2011).[1] Social identity refers to defining oneself as part of a social group, answering the question 'Who are we?', whereas personal identity refers to defining oneself at the level of the individual, answering the question 'Who am I?' This thesis focuses on the level of the individual, young people's personal identity formation.

Personal "identity, optimally, is an individually-constructed sense of who one is, based upon who one has been, and who one can realistically imagine oneself to be in the future" (Marcia, 2006, p. 585). However, what this 'sense of who one is' refers to exactly is hard to delimit, as individuals differ in what aspects they include when answering the question 'Who am I' and mention a broad range of aspects. This broad range of possible answers is shown when individuals are asked to complete twenty statements starting with 'I am' (i.e., the Twenty Statements Test), with answers reflecting roles, goals, interests, attitudes, abilities, etcetera (e.g., Kanagawa, Cross, & Markus, 2001; Rhee, Uleman, Lee, & Roman, 1995). Based on multiple previous definitions, personal identity can be defined as a self-constructed, internal, and dynamic organization of one's personal history, needs, abilities, tendencies, beliefs, roles, and goals (Hermans, 1996; Marcia, 1980; McLean & Syed, 2015a; Vignoles et al., 2011). All these aspects are organized, meaning that they are ideally integrated, with for example the self-perception of one's roles being based on one's self-perceived abilities, beliefs, and goals. In theory and empirical studies, personal identities are mostly examined by focusing on components that characterize an adaptive identity and the components and processes that are involved in developing a personal identity.

Conceptualizations of an Adaptive Personal Identity

Three key components of what an adaptive personal identity should provide can be identified in contemporary theories and studies on identity formation (Pasupathi, 2014), which date back to the writings of Erikson (1968). These three components form a broad framework for the different existing conceptualizations of and adaptive personal identity and personal identity formation, with each of these three components being conceptualized and studied in multiple ways.

[1] In addition to personal and social identity, other levels have been distinguished more proximal to the individual (e.g., ego identity; McLean & Syed, 2015a) or more distal (e.g., relational identity; Vignoles et al., 2011). However, these terms have not been used consistently throughout the literature and because several conceptualizations and operationalizations of identity referred to in this thesis likely comprise these levels as well as personal identity, I do not distinguish between them in this thesis.

First, an adaptive personal identity provides a sense of distinctiveness from others (Kernberg, 1987; Vignoles, 2011), as it "is superordinated to any single identification with individuals of the past: it includes all significant identifications, but it also alters them in order to make a unique … whole of them (Erikson, 1968, p. 161)." Because it is impossible to construe a personal identity without any sense of distinctiveness, acquiring a sense of distinctiveness has been theorized to be a human need (Brewer, 1991; Snyder & Fromkin, 1980). One conceptualization that falls under the broader component of distinctiveness is general distinctiveness, a feeling of distinctiveness from others in general (Snyder & Fromkin, 1980) that is commonly assessed with self-reports (e.g., Şimşek & Yalınçetin, 2010). Another conceptualization is comparative distinctiveness, which refers to the distinctions between self-perceptions and perceptions of specific others (Kelly, 1955) and is assessed by calculating the differences between self-reported perceptions of self and others (e.g., Feixas, Erazo-Caicedo, Harter, & Bach, 2008).

Second, an adaptive personal identity provides a sense of coherence. Individuals develop their identity in various identity-relevant domains (e.g., career and romantic relationships; Grotevant, Thorbecke, & Meyer, 1982). In an adaptive identity these domains are integrated and one experiences a sense of sameness across them (Erikson, 1968; McAdams, 2001; Van Hoof & Raaijmakers, 2002). A sense of coherence is thought to be adaptive as it represents the experience of an inner core of identity and the presence of internal reference points, instead of being completely controlled by one's context (Block, 1961). High personal coherence has been assumed to be reflected in either a high degree of similarity in self-perceptions across domains (Block, 1961) or in the absence of experienced conflicts between domains (Galliher, McLean, & Syed, 2017; Harter & Monsour, 1992).

Third, an adaptive personal identity provides a sense of continuity across time (Erikson, 1968; McAdams, 2001). Although young people are experiencing many changes, they can acquire a feeling of personal continuity by integrating past childhood identifications in their current identity, which includes commitments to current and future roles. The experience of personal continuity does not necessarily exclude personal change. If individuals can explain how past events have changed the self, they can still experience a sense of being the same person across time (McLean, 2008). An identity that provides a feeling of personal continuity is considered adaptive because it not only provides clarity about who one is, but also a sense of direction and purpose (Thoits, 1983). Continuity is assumed to be reflected in reports of an abstract feeling of personal continuity (e.g., Habermas & Köber, 2015), in strong identity commitments that provide a sense of direction towards the future (Marcia, 1966; Waterman, 1988), or in autobiographical stories

about how past experiences reflect or have changed the current self (Pasupathi, Mansour, & Brubaker, 2007).

Distinctiveness, coherence, and continuity are all considered adaptive as they are deemed to be part of a personal identity that is associated with higher well-being. However, it should be noted that if personal identities result in extreme distinctiveness, coherence, or continuity this could actually be maladaptive. Extreme distinctiveness in general or feeling highly distinct from those who are important to oneself might hamper one's sense of belonging (Brewer, 1991; Montoya, Horton, & Kirchner, 2008; Snyder & Fromkin, 1980). Extreme coherence or continuity might reflect inflexibility and rigidity, with individuals not being able to adapt to different situations or changing circumstances (Block, 1961; Kroger, 1996). Thus, a personal identity is expected to be adaptive when it provides a sense of personal distinctiveness, coherence, and continuity, but not to the extreme.

Conceptualizations of Personal Identity Development

In the present thesis, two developmental conceptualizations of personal identity are used: the dual-cycle models of identity formation and the narrative identity approach. Both approaches focus strongly on the construction of an identity that provides personal continuity (McAdams, 2001; Schwartz, 2001). Nevertheless, they differ in how they conceptualize and study personal identity and its developmental processes. As a result, the two approaches capture different components and processes or capture related components and processes in different ways.

Dual-cycle models of identity formation. Dual-cycle models of identity development are based on Marcia's (1966) identity status framework. Based on Erikson's writing, this framework provided an empirical definition of identity that could be assessed in an interview. Marcia (1966) conceptualized an adaptive personal identity as a strong set of *commitments*, which have ideally been chosen after a process of *exploring* possibilities. Commitments are firm choices in identity-relevant domains that are implemented in one's life. Individuals can for instance be committed to pursue a certain career and can be committed to a romantic relationship. Strong commitments provide a sense of personal continuity, as they provide the individual purpose and direction (Waterman, 1988). By guiding individuals' behaviour, strong commitments can function as a compass in life (Thoits, 1983). Based on Marcia's (1966) identity status approach, two dual-cycle models have been formulated that both describe individuals' engagement in exploration and commitment in a more detailed way, which can be assessed with self-report questionnaires (Crocetti, Rubini, & Meeus, 2008; Luyckx et al., 2008). Both models state that iterative and dynamic processes of exploring and

constructing commitments take place in two cycles. Yet, the two models also differ slightly from each other.

In the five-dimension model by Luyckx and colleagues (Luyckx, Goossens, & Soenens, 2006), the first cycle focuses on identity formation. In this cycle, various options to which one could commit are explored (i.e., *exploration in breadth*) and if a satisfying option is found a commitment is made (i.e., *commitment making*). The second cycle focuses on the evaluation of commitments. In this cycle, present commitments are explored by reflecting on them and gathering new information (i.e., *exploration in depth*). A positive outcome of this evaluation will lead to increased identification with this commitment and integration of this commitment in the self (i.e., *identification with commitment*). An unsatisfying outcome, however, could re-activate the first cycle of broader exploration of alternatives. In both cycles a more maladaptive type of exploration might occur, in which individuals get stuck in repeatedly thinking over identity options in a passive manner (i.e., *ruminative exploration*; Luyckx et al., 2008).

The more parsimonious three-dimension model by Meeus and Crocetti (Crocetti et al., 2008) differs slightly from the model by Luyckx and colleagues. The Meeus-Crocetti model does not distinguish between commitment making and identification with commitment but captures both of these dimensions in one *commitment* dimension. This model assumes that individuals always have commitments, although these might be weak. Therefore, the identity formation cycle of this model focuses not on exploration in breadth, but on the *reconsideration* of present commitments, a process in which present commitments are compared to possible alternatives. Like the model by Luyckx, the Meeus-Crocetti model specifies that *in-depth exploration* occurs in the second cycle, the identity maintenance cycle. The Meeus-Crocetti model does not include the more maladaptive dimension of ruminative exploration.

Narrative identity formation. Another approach to conceptualize personal identity development is the narrative identity approach, largely based on McAdams' life story model of identity (McAdams, 1985, 2001). Similar to the dual-cycle approach, Erikson's writings were "the point of departure" for the life story model (McAdams, 2001, p. 101). Not only Erikson's ideas on identity formation are reflected in the life story model, but also his work on psychobiographies. According to the life story model, an adaptive personal identity, or narrative identity, is an internalized life story that answers the question who one is and integrates one's past, present, and future. Life stories are thought to be constructed by narrating personally meaningful events of one's life, often in conversations with others (McLean & Pasupathi, 2011).

By integrating one's past, present, and future in one life story individuals can acquire a sense of personal continuity (McAdams, 2001; McLean & Syed, 2015a). Although personal continuity has received most attention in the narrative approach, life stories can also provide a sense of personal coherence and distinctiveness. That is, by integrating different scenes in one's life in one story individuals might make sense of intraindividual differences across domains, resulting in a sense of coherence (McAdams, 2001). Moreover, although life stories are constructed within a cultural framework that provides basic scripts (McLean & Syed, 2015b), each individual's life story is distinct, with for instance different persons fulfilling the roles of family and friends and with different events occurring. In addition, life stories are authored by the individuals' themselves and encompass individuals' own view on their past and future in a way that makes sense to them and their audiences (McAdams, 2001).

Life stories in which the past, present, and anticipated future are integrated, are thought to be constructed through autobiographical reasoning (Habermas & Reese, 2015). Autobiographical reasoning refers to linking personally salient events to each other and to aspects of the self. One type of autobiographical reasoning is making self-event connections: explicit connections between an experienced event and an aspect of the self (Pasupathi et al., 2007). An example of this would be stating that an event (e.g., being bullied by peers) caused an enduring change in the self (e.g., having learnt to stand up for oneself). By making these connections, an integrated life story evolves (McLean, Pasupathi, & Pals, 2007; Pasupathi et al., 2007). Self-event connections can promote a feeling of personal continuity as they can explain personal change over time (e.g., having learnt to stand up for oneself) and demonstrate stability in oneself (e.g., always having been able to stand up for oneself). Self-event connections can reflect connections with positive or neutral aspects of oneself, but also with negative aspects (e.g., because I was bullied by peers, I have not learnt how to make friends). These negative connections are more maladaptive and might reflect lower psychological well-being (Banks & Salmon, 2013; Merrill, Waters, & Fivush, 2016). Nevertheless, self-event connections are thought to play a central role in the construction of an integrated narrative identity and are in that sense considered adaptive.

In addition to the importance of autobiographical reasoning, the motivational themes of autobiographical stories are deemed markers of the adaptiveness of life stories. One of these themes is agency, which refers to strivings of the individual to protect and assert oneself, to be autonomous, and to be in control (Bakan, 1966). Autobiographical stories vary in the degree of agency that is demonstrated by the protagonist. That is, in some stories the protagonist is described as being able to influence the course of events (i.e., agentic), whereas in other stories the protagonist

is completely at mercy of external powers (i.e., non-agentic; Adler, Skalina, & McAdams, 2008). Autobiographical stories that reflect high agency are thought to be adaptive, because they satisfy individuals' needs to feel competent in effecting their lives and to behave in concordance with their sense of self (Adler 2012; Deci and Ryan 2000). Agency does not clearly fall under one of the three broader components of identity. As agency might strengthen one's individuality and provide a sense of direction, it could stimulate personal distinctiveness and continuity.

Because narrative identities are considered to consist out of autobiographical stories and to develop through narrating, participants are asked to share autobiographical stories in studies taking a narrative identity approach (Adler et al., 2017). Subsequently, researchers code the characteristics of these stories, for example on the presence of a self-event connection or on the degree of agency. By taking this approach, studies have for instance shown that the autobiographical reasoning of adolescents and young adults increases with age (Köber, Schmiedek, & Habermas, 2015) and that individuals who share more agentic autobiographical stories experience higher well-being (Adler, 2012; Adler, Lodi-Smith, Philippe, & Houle, 2016).

Domains of Personal Identity Formation

As stated in the definition of personal coherence, adolescents' and young adults' personal identities consist of various domain-specific identities. Erikson (1968) focused primarily on the construction of a personal identity with regard to occupation and ideology. According to him, settling on an occupational identity would be most important for young people. In line with this, a study by Kroger (1986) demonstrated that most young adults perceived the occupational domain as more central to their personal identity than the ideological subdomains of religion and politics. The construction of an occupational identity already starts with the construction of an educational identity. In the Netherlands, adolescents have to choose specific tracks during secondary education (i.e., level and curricula) and subsequently a specific level and major when entering tertiary education (Klimstra, Luyckx, & Meeus, 2012; Kunnen, 2019). These choices likely trigger many adolescents to question their educational and future occupational identity, as educational choices affect future occupational possibilities. Because educational and occupational identity formation are so strongly linked, they are in research sometimes combined (e.g., Meeus, Iedema, Helsen, & Vollebergh, 1999) and could be viewed as belonging to a broader career domain.

In addition, the interpersonal domain has shown to be an important domain of personal identity formation (Grotevant et al., 1982; Kroger, 1986). This domain refers to the various interpersonal relationships that individuals have with family

members and peers. Peers become increasingly important with age for young people. That is, during adolescence friendships become increasingly important (Brown, 2004) and during young adulthood the importance of romantic relationships generally increases (Arnett, 2000). At times young people might reconsider these relationships and look for alternatives, yet these relationships generally also become part of who they are.

All these domains are part of the autobiographical stories of young people (McLean & Breen, 2009; McLean, Syed, Yoder, & Greenhoot, 2014). Although autobiographical stories about some subdomains like religion and politics were in uncommon in the previously studied North American samples, young people did narrate about occupation, values, and interpersonal relationships. In addition to this, another domain appeared when examining young people's autobiographical stories: the existential domain. These stories about existential issues have confirmed the idea that asking questions like 'What is the meaning of my life?' and 'How can I make my life worthwhile?' are also part of personal identity formation (Bourne, 1978).

Previous studies on identity formation differ in how and whether they take domain-specific identities into account. Many studies on narrative identity have looked at general characteristics of stories without taking the content into account, but some have examined specific content domains (e.g., McLean, Syed, & Shucard, 2016). Similarly, studies on identity commitments differ in whether they aggregate multiple domains into one general commitment factor (e.g., Crocetti et al., 2008), focus on domain-specific commitments (e.g., Branje, Laninga-Wijnen, Yu, & Meeus, 2014), or focus on a rather broad domain of future plans that can be understood by adolescence in different personally relevant ways (Luyckx et al., 2008).

Studies with a domain-specific approach have revealed differences between identity domains. For instance, McLean et al. (2016) demonstrated that if young people were asked to write about specific domains, autobiographical stories about religion and occupation displayed more autobiographical reasoning than stories about interpersonal relationships. Furthermore, domain-specific studies on identity commitments have shown that the congruence between young people's commitment strength across domains is only weak (Crocetti, Scrignaro, Sica, & Magrin, 2012; Goossens, 2001; Luyckx, Seiffge-Krenke, Schwartz, Crocetti, & Klimstra, 2014).

DEVELOPMENT OF PERSONAL IDENTITY IN ADOLESCENCE AND YOUNG ADULTHOOD

Precursors of identity formation already develop during childhood, forming the starting point for adolescents' identity formation. Prior to adolescence,

individuals generally have adopted identifications from significant others around them (childhood identificaitons; Erikson, 1968). In addition, they are aware of some relatively straightforward self-attributes and can compare themselves to others, mainly with regard to specific competencies (Harter, 2012). Moreover, they are able to narrate single autobiographical events in a coherent manner (Habermas & Reese, 2015). Yet, it is in adolescence that the development of a personal identity emerges as a developmental task, likely because of an emerging urge to define the self (Erikson, 1968; McAdams & McLean, 2013), and made possible by the development of necessary cognitive abilities (Habermas & Reese, 2015). The idea of identity development as a key developmental task in adolescence was articulated in Erikson's (1950) stages of psychosocial development and is still shared among researchers of identity formation (e.g., Habermas & Reese, 2015; McAdams & Olson, 2010; Meeus, 2016). Furthermore, it is assumed that identity development does not end after adolescence, as it is a lifelong process (Erikson, 1968). Especially during the first years of adulthood (i.e., until about age 25), identity development remains a highly salient developmental task, as this period offers a lot of opportunities for identity exploration in Western societies (Arnett, 2000).

A review of the longitudinal studies on the development of personal identity commitments by Meeus (2011) showed that how young people cope with identity formation is rather stable. That is, individuals often remain in the same identity status (i.e., profiles based on the levels of all processes of a dual-cycle model) across years. Nevertheless, previous findings indicated average growth in identity development across adolescence and adulthood. That is, when individuals changed identity status, they changed more often to a more progressive status (e.g., higher on commitment). Moreover, previous findings showed mean-level increases in commitment strength and exploration, or mean-level decreases in reconsideration together with stability in the other dimensions. Furthermore, the review by Meeus (2011) indicated that the rank-order stability of individuals' commitment and exploration processes increases from adolescence to adulthood. Together, these findings indicate that there is indeed evidence for progressive identity development across adolescence and adulthood, and that with age individual differences in rank-order become more settled.

The review by Meeus (2011) focused on one specific approach to the study of identity formation, the development of commitments. A broader overview of the available empirical work on personal identity development across adolescence and young adulthood including multiple components of adaptive identity formation (i.e., distinctiveness, coherence, and continuity) was still lacking. Moreover, when zooming in on the specific period of adolescence and focusing on the more detailed commitment and exploration processes, the average developmental trends of the

dual-cycle processes are not that clear, as evidenced by many mixed findings. That is, although most findings indicated mean-level stability in commitment strength across adolescence (Crocetti, Klimstra, Hale, Koot, & Meeus, 2013; Klimstra, Hale, Raaijmakers, Branje, & Meeus, 2010), others indicated a strengthening of commitments (Luyckx, Teppers, Klimstra, & Rassart, 2014). Moreover, because the findings on exploration are even more mixed and the two dual-cycle models focus on different types of exploration, it is hard to interpret previous findings on identity exploration in adolescence (Crocetti et al., 2013; Klimstra et al., 2010; Luyckx, Teppers, et al., 2014). Thus, although previous findings have shown support for progressive identity development across adolescence and young adulthood, the details of this development (for different components of personal identity or across a specific period) are not yet clear.

CORRELATES, PREDICTORS, AND OUTCOMES OF PERSONAL IDENTITY FORMATION

Because personal identity development is expected to play a central role in human development across adolescence and young adulthood, it is important to examine its correlates, predictors, and outcomes. Undoubtedly, personal identity formation is (longitudinally) associated with various personal characteristics of young people. In addition to this, characteristics of the social contexts of young people are expected to be associated with personal identity formation. In Erikson's writings, the interpersonal context was crucial as a personal identity was thought to only result in a strong identity if others recognized this identity. Especially the peer context might play an important role in identity formation as adolescents are "eager to be affirmed by peers", but also "provide for one another a sanctioned moratorium and joint support for free experimentation" (Erikson, 1968, p. 130; Erikson, 1959/1994, p. 127). In addition to the influence that the social context might have on young people's identity formation, the developmental task of identity formation was stated to precede the developmental task of forming intimate relationships in Erikson's (1950) stages of psychosocial development. Because characteristics of young people's social context are expected to be intertwined with personal identity formation, extra attention has been paid to interpersonal relationships and social well-being in this thesis.

Previous empirical studies on associations between personal identity formation and young people's personal and social characteristics have indicated various associations (for an overview see Klimstra & Van Doeselaar, 2017; Meeus, 2011). However, to get a better insight in the role of personal identity in the course of young people's lives, more detailed information is necessary than only knowledge about concurrent associations or related developments. Two types of approaches

are specifically important. First, because young people's (adaptive) personal identities consist of various components (i.e., distinctiveness, coherence, and continuity; multiple identity-relevant domains), comparing the associations of these different components with psychosocial functioning would increase insight in the structure of identity and the importance of each component. So far, studies comparing the associations of different personal identity components with psychosocial functioning are relatively scarce (examples of exceptions are Luyckx, Seiffge-Krenke, et al., 2014; Pilarska, 2014; Van Hoof & Raaijmakers, 2002).

Second, building on previous cross-sectional studies, the next step is to examine associations longitudinally. Young people's personal identity might be linked to personal and social characteristics in various ways (Klimstra & Denissen, 2017). Previous studies have shown that personal characteristics of adolescents (e.g., depressive symptoms; Schwartz, Klimstra, Luyckx, Hale, & Meeus, 2012) and characteristics of interpersonal relationships (e.g., siblings' identity processes; Wong, Branje, VanderValk, Hawk, & Meeus, 2010) can predict identity development over time and/or vice versa. In order to understand the role that personal identity plays, it is vital to examine what predicts a more adaptive identity and what is predicted by a more adaptive identity over time. To examine these associations, more longitudinal research is necessary.

AIMS AND OUTLINE OF THE THESIS

To fill in the described gaps in the literature, this thesis has three aims with regard to the study of personal identity in adolescence and young adulthood. The first aim is to examine the conceptualization of personal identity by studying and integrating different components. The second aim is to study the general developmental trends of different components of personal identity development. The third aim is to examine which personal and social characteristics predict a more adaptive identity and which characteristics are predicted by a more adaptive identity over time. An overview of the research focus, study design, and samples in each of the following chapters is shown in Table 1.1.

As shown in Table 1.1, after this introductory chapter, a systematic review of previous empirical studies on the three components of an adaptive identity (i.e., distinctiveness, coherence, and continuity) is described in **Chapter 2**. Findings on the development of the different components and their link with psychosocial functioning in adolescence and young adulthood are discussed and compared, and an integrative framework on the link between the three components is outlined. Subsequently, the concept of distinctiveness was examined in more detail in the studies described in **Chapter 3**. The nomological networks of two conceptualizations of distinctiveness (i.e., general and comparative distinctiveness),

including associations with psychosocial functioning, were examined in two young adult samples. Moreover, these networks were compared to each other and to the network of commitment strength, a conceptualization representing the component of continuity. **Chapter 4** focuses on the integration of two approaches to conceptualize and study identity development, strongly focused on the component of continuity: the dual-cycle and the narrative approach. First, the overlap between key dimensions of both approaches was tested in a large cross-sectional adolescent sample. Second, it was tested in a longitudinal subsample whether individual differences in the developments in the dual-cycle processes could be predicted by characteristics of adolescents' autobiographical narration. The studies described in **Chapter 5** focus on two domain-specific commitments: interpersonal (best friend and/or romantic partner) and career (education and/or work) commitments. In two longitudinal studies, their unique associations with experienced stressful life events and with depressive symptoms were examined across adolescence and young adulthood. Next, the longitudinal study described in **Chapter 6** provides an in-depth view in one approach to the study of identity formation and focuses on one specific domain: the development of educational identity commitments. In this study, it was examined how the three processes that are articulated to be involved in the formation and maintenance of an educational identity in the Meeus-Crocetti model are associated with characteristics of adolescents' best friends (i.e., best friends' educational identity and provided balanced relatedness). Lastly, an integration and general discussion of the findings is provided in **Chapter 7**.

STUDY DESIGNS AND SAMPLES

In the next five chapters, empirical findings on a multitude of conceptualizations of personal identity are brought together and integrated (see Table 1.1). These conceptualizations of personal identity are assessed in a variety ways, using different methodologies. Some conceptualizations are measured directly using self-report questionnaires (e.g., commitment and general distinctiveness). Others are measured more indirectly, by calculating the degree of difference between multiple self-reports on different domains or individuals (coherence and comparative distinctiveness). Yet other conceptualizations are measured by coding written autobiographical narratives (narrative agency and self-event connections).

These different conceptualizations and methodologies are brought together in a systematic review as well as in various empirical studies. The empirical studies include cross-sectional as well as longitudinal analyses. Twice a chapter includes a second separate sample to test the robustness of findings and to examine closely related hypotheses. The empirical chapters are based on data from six different

samples, in which in total 5,465 target adolescents and young adults participated plus a sample of 760 best friends.

Psychology Students Sample (NL)

The first empirical study in Chapter 3 focuses on a sample of 320 Psychology students (70.3% women, M_{age} = 20.1, range = 17-28 years) from Tilburg University, who participated in an online cross-sectional study in exchange for course credit in 2017. Students completed self-report questionnaires, assessing the strength of their commitments to future plans, general distinctiveness, and various indicators of psychosocial functioning. In addition, comparative distinctiveness was calculated based on self-reported perceptions of the self and important others.

College Students Sample (US)

The sample for the second empirical study in Chapter 3 consists of 246 US college students (39.8% women, M_{age} = 20.9, range = 18-24 years) who signed up for the study via the crowdsourcing platform Prolific (https://prolific.ac/) in 2018. Because this study was largely conducted to test the replicability of the findings from the Psychology Students Sample (NL), the US college students reported on largely the same measures as the Dutch sample. In addition to this, comparative distinctiveness was calculated based on their self-reported perceptions of the self and disliked others.

Project-Me

Project-Me is an ongoing longitudinal study. In 2015/2016, 1,941 adolescents participated in the first wave at various secondary schools in Noord-Brabant, the Netherlands in the presence of trained assistants. Adolescents were asked to complete a self-report questionnaire on the dual-cycle processes. In addition to this, adolescents were asked to write an autobiographical narrative on a turning point event. For the empirical studies in Chapter 4, these stories were coded by trained coders on two characteristics: the presence of a self-event connection and the degree of expressed agency. The first study in Chapter 4 is cross-sectional and focuses on the 1,580 adolescents (56.2% female, M_{age} = 14.7 years, range = 12-17) who completed these measures at the first wave.

One and two years after the first wave, adolescents were asked if they wanted to participate in the longitudinal part of Project-Me. After receiving parental approval, participating adolescents completed an online questionnaire during their free time and received a financial compensation. The second study in Chapter 4 focuses on a longitudinal subsample of 242 adolescents (62.0% female, M_{age} = 14.7 years at T1, range = 13-16) included in the first study and who reported on the dual-cycle processes at the second and/or third wave.

CONAMORE

The first study in Chapter 5 made use of data from the longitudinal CONflict And Management Of RElationships (CONAMORE) project. For the first wave in 2001, 1,341 participants were recruited from high schools in the surroundings of Utrecht, the Netherlands. The first study in Chapter 5 focused on three waves of the CONAMORE project that had a 4-year interval and included the 951 adolescents and young adults (56.2% female, M_{age} = 13.6 years, range = 11-20) who still participated in the wave that took place 8 years after wave 1. At each of these waves, participants completed questionnaires after school hours or during home visits. Participants completed self-report questionnaires on their identity commitment in the career and interpersonal domain, depressive symptoms, and stressful life events that affected them directly or important others around them.

USAD

The second study in Chapter 5 made use of data from 1,904 adolescents and young adults (56.7% female, M_{age} = 18.3 years, range = 12-24) that participated in the longitudinal Utrecht Study of Adolescent Development (USAD). In 1991, participants were recruited from an existing panel of 10,000 households in the Netherlands. This was followed up with two additional waves with a 3-year interval. At all waves, participants completed questionnaires at home in the presence of trained assistants. Like in CONAMORE, participants completed self-report questionnaires on their identity commitment in the career and interpersonal domain, depressive symptoms, and stressful life events that affected them directly or important others around them.

RADAR-young

Data from the second to the sixth wave of the longitudinal Research on Adolescent Development and Relationships (RADAR) young cohort were used for the study in Chapter 6. The 464 target adolescents (44.0% female, M_{age} = 14.0 years, range = 12-16) on which this study is based were recruited from Dutch elementary schools and visited during annual home visits. Target adolescents were asked to invite their best friend to these home visits. From the second wave in 2007 onwards adolescents and their best friend completed self-report questionnaires on the dual-cycle processes related to their educational identity. Moreover, adolescents reported on the degree to which they perceived balanced relatedness in the friendship with this best friend.

Table 1.1 | Overview of the Research Focus, Study Design, Examined Constructs, and Sample in each of the Chapters

Ch.	Research focus	Study design	Constructs		Sample
			Identity formation components	Correlates, predictors, & outcomes	
2	• Associations between distinctiveness, coherence, and continuity **(Aim 1)** • Development of distinctiveness, coherence, and continuity **(Aim 2)** • Associations of distinctiveness, coherence, and continuity with psychosocial functioning **(Aim 3)**	Systematic review	Distinctiveness Coherence Continuity	Psychosocial functioning	Adolescent and young adult samples
3	• Nomological networks of general and comparative distinctiveness **(Aim 1 & 3)** • Similarities and differences between nomological networks of general distinctiveness, comparative distinctiveness and commitment **(Aim 1 & 3)** • Incremental predictive value of general distinctiveness, comparative distinctiveness, and commitment in predicting psychosocial functioning **(Aim 3)**	Study 1: Cross-sectional	General distinctiveness Comparative distinctiveness self and important others Identification with commitment Future plan	Identity issues distress Global identity distress Ruminative exploration Future plan Relatedness Parent-related loneliness Peer-related loneliness Self-esteem Life satisfaction Narcissistic admiration Narcissistic rivalry	Psychology students (NL) *n* = 320 Ages = 17-28 M_{age} = 20.1
		Study 2: Cross-sectional	General distinctiveness Comparative distinctiveness self and important others Comparative distinctiveness self and disliked others Identification with commitment Future plan	Identity issues distress Global identity distress Ruminative exploration Future plan Relatedness Parent-related loneliness Peer-related loneliness Self-esteem Life satisfaction Narcissistic admiration Narcissistic rivalry	College students (US) *n* = 246 Ages = 18-24 M_{age} = 20.9

4	• Association between the narrative and the dual-cycle approach **(Aim 1)** • Predictive effects of autobiographical narrating on dual-cycle processes **(Aim 1)** • Mean-level developments of dual-cycle processes in middle adolescence **(Aim 2)**	Study 1: Cross-sectional Study 2: Longitudinal subsample (2 years)	Self-event connections in autobiographical narratives Agency in autobiographical narratives Identification with commitment Future plan Commitment making Future plan Exploration in breadth Future plan Exploration in depth Future plan Ruminative exploration Future plan	-	Adolescents (*Project-Me*) *n* = 1,580 Ages = 12-17 *M* age = 14.7 Adolescents (*Project-Me*) *n* = 242 Ages T1 = 13-16 M_{age} T1 = 14.7
5	• Bidirectional links between career and interpersonal commitments and depressive symptoms **(Aim 3)** • Bidirectional links between career and interpersonal commitments and stressful life events **(Aim 3)** • Buffer effect of identity commitments on the predictive effect of stressful life events on depressive symptoms **(Aim 3)**	Study 1: Longitudinal (8 years) Study 2: Longitudinal (6 years)	Commitment Career Commitment Interpersonal Commitment Career Commitment Interpersonal	Depressive symptoms Stressful life events Depressive symptoms Stressful life events	Adolescents and young adults (*CONAMORE*) *n* = 951 Ages T1 = 11-20 *M* age T1 = 13.6 Adolescents and young adults (*USAD*) *n* = 1,904 Ages T1 = 12-24 M_{age} T1 = 18.3
6	• Bidirectional links between best friends' educational commitment formation processes **(Aim 3)** • Bidirectional links between best friends' balanced relatedness and educational commitment formation processes **(Aim 3)**	Longitudinal (4 years)	Commitment Education In-depth exploration Education Reconsideration Education	Commitment friend Education In-depth exploration friend Education Reconsideration friend Education Balanced relatedness friend	Adolescents (*n* = 464) and their best friends (*RADAR*) Ages T1 = 12-16 M_{age} T1 = 14.0

REFERENCES

Adler, J. M. (2012). Living into the story: Agency and coherence in a longitudinal study of narrative identity development and mental health over the course of psychotherapy. *Journal of Personality and Social Psychology, 102*, 367-389. doi:10.1037/a0025289

Adler, J. M., Dunlop, W. L., Fivush, R., Lilgendahl, J. P., Lodi-Smith, J., McAdams, D. P., . . . Syed, M. (2017). Research methods for studying narrative identity: A primer. *Social Psychological and Personality Science, 8*, 519-527. doi:10.1177/1948550617698202

Adler, J. M., Lodi-Smith, J., Philippe, F. L., & Houle, I. (2016). The incremental validity of narrative identity in predicting well-being: A review of the field and recommendations for the future. *Personality and Social Psychology Review, 20*, 142-175. doi:10.1177/1088868315585068

Adler, J. M., Skalina, L. M., & McAdams, D. P. (2008). The narrative reconstruction of psychotherapy and psychological health. *Psychotherapy Research, 18*, 719-734. doi:10.1080/10503300802326020

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*, 469-480. doi:10.1037/0003-066x.55.5.469

Bakan, D. (1966). *The duality of human existence: Isolation and communion in Western man*. Boston, MA: Beacon Press.

Banks, M. V., & Salmon, K. (2013). Reasoning about the self in positive and negative ways: Relationship to psychological functioning in young adulthood. *Memory, 21*, 10-26. doi:10.1080/09658211.2012.707213

Block, J. (1961). Ego identity, role variability, and adjustment. *Journal of Consulting Psychology, 25*, 392-397. doi:10.1037/h0042979

Bourne, E. (1978). The state of research on ego identity: A review and appraisal. Part I. *Journal of Youth and Adolescence, 7*, 371-392. doi:10.1007/BF01537976

Branje, S., Laninga-Wijnen, L., Yu, R., & Meeus, W. (2014). Associations among school and friendship identity in adolescence and romantic relationships and work in emerging adulthood. *Emerging Adulthood, 2*, 6-16. doi:10.1177/2167696813515851

Brewer, M. B. (1991). The social self: On being the same and different at the same time. *Personality and Social Psychology Bulletin, 17*, 475-482. doi:10.1177/0146167291175001

Brown, B. B. (2004). Adolescents' relationships with peers. In R. M. Lerner & S. L. (Eds.), *Handbook of adolescent psychology*. Hoboken, NJ: Wiley.

Côte, J. E., & Levine, C. (1988). A critical examination of the ego identity status paradigm. *Developmental Review, 8*, 147-184. doi:10.1016/0273-2297(88)90002-0

Crocetti, E., Klimstra, T. A., Hale, W. W., Koot, H. M., & Meeus, W. (2013). Impact of early adolescent externalizing problem behaviors on identity development in middle to late adolescence: A prospective 7-year longitudinal study. *Journal of Youth and Adolescence, 42*, 1745-1758. doi:10.1007/s10964-013-9924-6

Crocetti, E., Rubini, M., & Meeus, W. (2008). Capturing the dynamics of identity formation in various ethnic groups: Development and validation of a three-dimensional model. *Journal of Adolescence, 31*, 207-222. doi:10.1016/j.adolescence.2007.09.002

Crocetti, E., & Salmela-Aro, K. (2018). The multifaceted nature of identity. *European Psychologist, 23*, 273-277. doi:10.1027/1016-9040/a000340

Crocetti, E., Scrignaro, M., Sica, L. S., & Magrin, M. E. (2012). Correlates of identity configurations: Three studies with adolescent and emerging adult cohorts. *Journal of Youth and Adolescence, 41*, 732-748. doi:10.1007/s10964-011-9702-2

Erikson, E. H. (1950). *Childhood and society*. New York, NY: Norton.

Erikson, E. H. (1968). *Identity: Youth and crisis*. New York, NY: Norton.

Erikson, E. H. (1994). *Identity and the life cycle*. New York, NY: Norton (Original work published 1959).

Feixas, G., Erazo-Caicedo, M. I., Harter, S. L., & Bach, L. (2008). Construction of self and others in unipolar depressive disorders: A study using repertory grid technique. *Cognitive Therapy and Research, 32*, 386-400. doi:10.1007/s10608-007-9149-7

Galliher, R. V., McLean, K. C., & Syed, M. (2017). An integrated developmental model for studying identity content in context. *Developmental Psychology, 53*, 2011. doi:10.1037/dev0000299

Goossens, L. (2001). Global versus domain-specific statuses in identity research: A comparison of two self-report measures. *Journal of Adolescence, 24*, 681-699. doi:10.1006/jado.2001.0438

Grotevant, H. D., Thorbecke, W., & Meyer, M. L. (1982). An extension of Marcia's Identity Status Interview into the interpersonal domain. *Journal of Youth and Adolescence, 11*, 33-47. doi:10.1007/BF01537815

Habermas, T., & Köber, C. (2015). Autobiographical reasoning in life narratives buffers the effect of biographical disruptions on the sense of self-continuity. *Memory, 23*, 664-674. doi:10.1080/09658211.2014.920885

Habermas, T., & Reese, E. (2015). Getting a life takes time: The development of the life story in adolescence, its precursors and consequences. *Human Development, 58*, 172-201. doi:10.1159/000437245

Harter, S. (2012). *The construction of the self: Developmental and sociocultural foundations* (2nd ed.). New York, NY: Guilford.

Harter, S., & Monsour, A. (1992). Development analysis of conflict caused by opposing attributes in the adolescent self-portrait. *Developmental Psychology, 28*, 251-260. doi:10.1037/0012-1649.28.2.251

Hermans, H. J. M. (1996). Voicing the self: From information processing to dialogical interchange. *Psychological Bulletin, 119*, 31-50. doi:10.1037/0033-2909.119.1.31

Kanagawa, C., Cross, S. E., & Markus, H. R. (2001). "Who am I?" The cultural psychology of the conceptual self. *Personality and Social Psychology Bulletin, 27*, 90-103. doi:10.1177/0146167201271008

Kelly, G. A. (1955). *The psychology of personal constructs*. New York, NY: Norton.

Kernberg, O. F. (1987). Projection and projective identification: Developmental and clinical aspects. *Journal of the American Psychoanalytic Association, 35*, 795-819. doi:10.1177/000306518703500401

Klimstra, T. A., & Denissen, J. J. A. (2017). A theoretical framework for the associations between identity and psychopathology. *Developmental Psychology, 53*, 2052-2065. doi:10.1037/dev0000356

Klimstra, T. A., Hale, W. W., 3rd, Raaijmakers, Q. A. W., Branje, S., & Meeus, W. (2010). Identity formation in adolescence: Change or stability? *Journal of Youth and Adolescence, 39*, 150-162. doi:10.1007/s10964-009-9401-4

Klimstra, T. A., Luyckx, K., & Meeus, W. H. J. (2012). Personal identity in Belgium and The Netherlands. *New Directions for Child and Adolescent Development, 2012*, 19-34. doi:10.1002/cad.20020

Klimstra, T. A., & Van Doeselaar, L. (2017). Identity formation in adolescence and young adulthood. In J. Specht (Ed.), *Personality development across the lifespan* (pp. 293-308): Academic Press.

Köber, C., Schmiedek, F., & Habermas, T. (2015). Characterizing lifespan development of three aspects of coherence in life narratives: A cohort-sequential study. *Developmental Psychology, 51*, 260-275. doi:10.1037/a0038668

Kroger, J. (1986). The relative importance of identity status interview components: Replication and extension. *Journal of Adolescence, 9*, 337-354. doi:10.1016/s0140-1971(86)80040-9

Kroger, J. (1996). Identity, regression and development. *Journal of Adolescence, 19*, 203-222. doi:10.1006/jado.1996.0020

Kunnen, E. S. (2019). *The Netherlands: Research on identity formation and positive psychological functioning*. Unpublished manuscript, University of Groningen, the Netherlands.

Luyckx, K., Goossens, L., & Soenens, B. (2006). A developmental contextual perspective on identity construction in emerging adulthood: Change dynamics in commitment formation and commitment evaluation. *Developmental Psychology, 42*, 366-380. doi:10.1037/0012-1649.42.2.366

Luyckx, K., Schwartz, S. J., Berzonsky, M. D., Soenens, B., Vansteenkiste, M., Smits, I., & Goossens, L. (2008). Capturing ruminative exploration: Extending the four-dimensional model of identity formation in late adolescence. *Journal of Research in Personality, 42*, 58-82. doi:10.1016/j.jrp.2007.04.004

Luyckx, K., Seiffge-Krenke, I., Schwartz, S. J., Crocetti, E., & Klimstra, T. A. (2014). Identity configurations across love and work in emerging adults in romantic relationships. *Journal of Applied Developmental Psychology, 35*, 192-203. doi:10.1016/j.appdev.2014.03.007

Luyckx, K., Teppers, E., Klimstra, T. A., & Rassart, J. (2014). Identity processes and personality traits and types in adolescence: Directionality of effects and developmental trajectories. *Developmental Psychology, 50*, 2144-2153. doi:10.1037/a0037256

Marcia, J. E. (1966). Development and validation of ego-identity status. *Journal of Personality and Social Psychology, 3*, 551-558. doi:10.1037/h0023281

Marcia, J. E. (1980). Identity in adolescence. *Handbook of adolescent psychology, 9*, 159-187.

Marcia, J. E. (2006). Ego identity and personality disorders. *Journal of Personality Disorders, 20*, 577-596. doi:10.1521/pedi.2006.20.6.577

McAdams, D. P. (1985). *Power, intimacy, and the life story: Personological inquiries into identity*. New York, NY: Guilford Press.
McAdams, D. P. (2001). The psychology of life stories. *Review of General Psychology, 5*, 100-122. doi:10.1037/1089-2680.5.2.100
McAdams, D. P., & McLean, K. C. (2013). Narrative identity. *Current Directions in Psychological Science, 22*, 233-238. doi:10.1177/0963721413475622
McAdams, D. P., & Olson, B. D. (2010). Personality development: Continuity and change over the life course. *Annual Review of Psychology*, 517-542. doi:10.1146/annurev.psych.093008.100507
McLean, K. C. (2008). Stories of the young and the old: Reflections on self-continuity. *Developmental Psychology, 44*, 254-164. doi:10.1037/0012-1649.44.1.254
McLean, K. C., & Breen, A. V. (2009). Processes and content of narrative identity development in adolescence: Gender and well-being. *Developmental Psychology, 45*, 702-710. doi:10.1037/a0015207
McLean, K. C., & Pasupathi, M. (2011). Old, new, borrowed, blue? The emergence and retention of personal meaning in autobiographical storytelling. *Journal of Personality, 79*, 135-163. doi:10.1111/j.1467-6494.2010.00676.x
McLean, K. C., Pasupathi, M., & Pals, J. L. (2007). Selves creating stories creating selves: A process model of self-development. *Personality and Social Psychology Review, 11*, 262-278. doi:10.1177/1088868307301034
McLean, K. C., & Syed, M. (2015a). The field of identity development needs an identity: An introduction to the Oxford handbook of identity development. In K. C. McLean & M. Syed (Eds.), *The Oxford handbook of identity development* (pp. 1-10). New York, NY: Oxford University Press.
McLean, K. C., & Syed, M. (2015b). Personal, master, and alternative narratives: An integrative framework for understanding identity development in context. *Human Development, 58*, 318-349. doi:doi.org/10.1159/000445817
McLean, K. C., Syed, M., & Shucard, H. (2016). Bringing identity content to the fore: Links to identity development processes. *Emerging Adulthood, 4*, 356-364. doi:10.1177/2167696815626820
McLean, K. C., Syed, M., Yoder, A., & Greenhoot, A. F. (2014). The role of domain content in understanding identity development processes. *Journal of Research on Adolescence, 26*, 60-75. doi:10.1111/jora.12169
Meeus, W. (2011). The study of adolescent identity formation 2000–2010: A review of longitudinal research. *Journal of Research on Adolescence, 21*, 75-94. doi:10.1111/j.1532-7795.2010.00716.x
Meeus, W. (2016). Adolescent psychosocial development: A review of longitudinal models and research. *Developmental Psychology, 52*, 1969-1993. doi:10.1037/dev0000243
Meeus, W., Iedema, J., Helsen, M., & Vollebergh, W. (1999). Patterns of adolescent identity development: Review of literature and longitudinal analysis. *Developmental Review, 19*, 419-461. doi:10.1006/drev.1999.0483
Merrill, N., Waters, T. E., & Fivush, R. (2016). Connecting the self to traumatic and positive events: Links to identity and well-being. *Memory, 24*, 1321-1328. doi:10.1080/09658211.2015.1104358
Montoya, R. M., Horton, R. S., & Kirchner, J. (2008). Is actual similarity necessary for attraction? A meta-analysis of actual and perceived similarity. *Journal of Social and Personal Relationships, 25*, 889-922. doi:10.1177/0265407508096700
Pasupathi, M. (2014). Identity development: Dialogue between normative and pathological developmental approaches. *Journal of Personality Disorders, 28*, 113-120. doi:10.1521/pedi.2014.28.1.113
Pasupathi, M., Mansour, E., & Brubaker, J. R. (2007). Developing a life story: Constructing relations between self and experience in autobiographical narratives. *Human Development, 50*, 85-110. doi:10.1159/000100939
Pilarska, A. (2014). Self-construal as a mediator between identity structure and subjective well-being. *Current Psychology, 33*, 130-154. doi:10.1007/s12144-013-9202-5
Rhee, E., Uleman, J. S., Lee, H. K., & Roman, R. J. (1995). Spontaneous self-descriptions and ethnic identities in individualistic and collectivistic cultures. *Journal of Personality and Social Psychology, 69*, 142- 152. doi:10.1037/0022-3514.69.1.142
Schwartz, S. J. (2001). The evolution of Eriksonian and, neo-Eriksonian identity theory and research: A review and integration. *Identity: An International Journal of Theory and Research, 1*, 7-58. doi:10.1207/S1532706XSCHWARTZ

Schwartz, S. J., Klimstra, T. A., Luyckx, K., Hale, W. W., 3rd, & Meeus, W. H. (2012). Characterizing the self-system over time in adolescence: Internal structure and associations with internalizing symptoms. *Journal of Youth and Adolescence, 41*, 1208-1225. doi:10.1007/s10964-012-9751-1

Şimşek, Ö. F., & Yalınçetin, B. (2010). I feel unique, therefore I am: The development and preliminary validation of the Personal Sense of Uniqueness (PSU) scale. *Personality and Individual Differences, 49*, 576-581. doi:10.1016/j.paid.2010.05.006

Snyder, C. R., & Fromkin, H. L. (1980). *Uniqueness: The human pursuit of difference*. New York, NY: Plenum Press.

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33-47). Monterey, CA: Brooks-Cole.

Thoits, P. A. (1983). Multiple identities and psychological well-being: A reformulation and test of the social isolation hypothesis. *American Sociological Review, 48*, 174-187. doi:10.2307/2095103

Van Hoof, A. (1999). The identity status field re-reviewed: An update of unresolved and neglected issues with a view on some alternative approaches. *Developmental Review, 19*, 497-556. doi:10.1006/drev.1999.0484

Van Hoof, A., & Raaijmakers, Q. A. W. (2002). The spatial integration of adolescent identity: Its relation to age, education, and subjective well-being. *Scandinavian Journal of Psychology, 43*, 201-212. doi:10.1111/1467-9450.00288

Vignoles, V. L. (2011). Identity motives. In S. J. Schwartz, K. Luyckx, & V. L. Vignoles (Eds.), *Handbook of identity theory and research* (pp. 403-432). New York, NY: Springer.

Vignoles, V. L., Schwartz, S. J., & Luyckx, K. (2011). Introduction: Toward an integrative view of identity. In S. J. Schwartz, K. Luyckx, & V. L. Vignoles (Eds.), *Handbook of identity theory and research* (pp. 1-27). New York, NY: Springer.

Waterman, A. S. (1988). Identity status theory and Erikson's theory: Communalities and differences. *Developmental Review, 8*, 185-208. doi:10.1016/0273-2297(88)90003-2

Wong, T. M. L., Branje, S. J. T., VanderValk, I. E., Hawk, S. T., & Meeus, W. H. J. (2010). The role of siblings in identity development in adolescence and emerging adulthood. *Journal of Adolescence, 33*, 673-682. doi:10.1016/j.adolescence.2009.11.003

CHAPTER 2

A Review and Integration of Three Key Components of Identity Development: Distinctiveness, Coherence, and Continuity

Van Doeselaar*, L., Becht*, A. I., Klimstra, T. A., & Meeus, W. H. J. (2018). A review and integration of three key components of identity development: Distinctiveness, coherence, and continuity. *European Psychologist, 23*, 278-288. https://doi.org/10.1027/1016-9040/a000334

* Shared first authorship

ABSTRACT

Studies on identity formation focus on various components of identity. However, these components have mainly been studied separately, and researchers in different fields are not always aware of each other's work. Therefore, this systematic review provides an overview of theories and empirical studies on three key components of identity: distinctiveness (seeing the self as unique and distinct from others), coherence (perceiving the self as similar across life domains), and continuity (perceiving the self as the same person over time). This systematic review focused on the development of these components and linkages with psychosocial functioning. Findings suggest important differences between the three identity components. Therefore, we propose an integrative developmental framework of identity, including all three identity components and their linkages.

INTRODUCTION

The importance of establishing a clear identity is widely recognized in different developmental theories (e.g., Arnett, 2000; Erikson, 1968; Kernberg & Caligor, 2005). Yet, studies on identity formation vary substantially in their emphases and approaches. Some studies focus on identity content, whereas others focus on the structure or processes of identity formation (McLean, Syed, & Shucard, 2016). Moreover, studies differ in their conceptualization of identity. Overall, three core components have been recognized: distinctiveness (seeing the self as unique and distinct from others), coherence (perceiving the self as similar across domains), and continuity (perceiving the self as the same person over time; Pasupathi, 2014).

The distinction between distinctiveness, coherence, and continuity dates back to Erikson (1968). For example, he noted that "the final identity … is superordinated to any single identification with individuals of the past: it includes all significant identifications, but it also alters them in order to make a unique and reasonably coherent whole of them" (p. 161). This definition illustrates that the formation of a set of identity commitments contributes to experiencing the self as distinct from others. Furthermore, Erikson (1968) emphasized that the feeling of having a personal identity is based on "the perception of the selfsameness and continuity of one's existence in time and space" (p. 50). This demonstrates Erikson's notion that identity provides individuals with a sense of continuity across time and coherence across contexts (referred to as "spaces" by Erikson).

Today, distinctiveness, coherence, and continuity are still central to the conceptualization of identity (Pasupathi, 2014). However, different identity components have been studied in different research fields. That is, the concept of identity distinctiveness has mainly been studied in social and clinical psychology. Identity coherence is often a topic in developmental, social, and personality psychology. Finally, identity continuity is mainly studied in developmental psychology and within narrative research traditions (Pasupathi, 2014).

What makes matters worse is that these components have mainly been studied separately with researchers in various fields not always being aware of each other's work, whereas integrating all three components in one model would advance the study of identity (Pasupathi, 2014). To facilitate changes to this unfortunate situation, we first provide a systematic overview of theoretical and empirical studies on these identity components in adolescence and young adulthood. Second, we present an integrative developmental framework that clarifies how these different identity components are interrelated.

THE PRESENT REVIEW

We used the PsycINFO and Web of Science databases to retrieve empirical studies on distinctiveness, coherence, and continuity. First, we applied various search terms for each component. For distinctiveness, we used the terms "self-other differentiation", "distinct self", "personal uniqueness", and variations on these. This resulted in 70 hits. For coherence, we used the terms "identity consistency", "self-concept differentiation", "differentiation of the self", and "spatial continuity and (identity or self)", resulting in 102 hits. For continuity, we used the terms "identity commitment", "continuity", "sense of continuity", which resulted in 152 hits. Our search and selection of papers was restricted to the age groups adolescence and young adulthood, and to peer-reviewed, English-language, and quantitative studies. From the retrieved studies, we selected studies on (a) the development of a component, and/or (b) the link between one component and psychosocial functioning, and/or (c) the link between the components. In a second step, we checked the articles that cited key studies on the development of measures to assess these identity components. Selected studies are shown in Tables S2.1, S2.2, and S2.3 in the supplemental materials.

IDENTITY DISTINCTIVENESS

Theoretical Models

Already in the first years of life, individuals start perceiving themselves as unique and distinct from others (for an overview see Harter, 2012). For example, around 18 months of age, individuals can recognize themselves in a mirror (Rochat, 2003). These early developments result in the awareness that the self and others exist and have different physical characteristics. However, in adolescence the distinction between self and others becomes more detailed, as individuals start recognizing their own traits, goals, and values (Harter, 2012).

In addition to Erikson (1968), various theories have described the importance of constructing a unique identity that provides a sense of distinctiveness during adolescence. For example, Vignoles' (2011) motivated identity construction theory holds that individuals are universally motivated to construct an identity that differentiates themselves from others. The motive to see oneself as distinct can thus push people to construct their identity in a way that distinguishes them.

However, uniqueness theory (Snyder & Fromkin, 1980) indicates that feeling too distinct might be problematic. This theory states that uniqueness (or distinctiveness) is a common dimension on which people define themselves. This means that most people compare themselves to others, and as a result perceive a certain degree of distinctiveness. The experience of a moderate sense of

distinctiveness would be most adaptive. Both being overly similar or distinctive would result in negative emotions.

Feeling extremely distinct is theorized to be more common during adolescence. According to Elkind (1967), adolescents tend to believe in a personal fable, which entails that they are unique. This feeling of uniqueness is so extreme that adolescents would believe others can never understand them. According to Lapsley, FitzGerald, Rice, and Jackson (1989) the personal fable might help adolescents in their striving to become more independent, because feeling distinct can help to create boundaries between the self and others (Blos, 1967). Thus, feeling extremely distinct should be more common in adolescence, but all abovementioned theories indicate that achieving a sense of distinctiveness is an important normative developmental task.

Theories with a psychopathological perspective have focused on the role of an extreme lack of distinctiveness between self and others. Kernberg's theory on pathological personality organizations suggests that an extreme lack of distinctiveness results in an inability to distinguish between experiences, emotions, and thoughts of the self and those of others (i.e., psychotic personality organization; Kernberg & Caligor, 2005). This way, a pathological lack of distinctiveness could result in psychotic states, as also suggested by Erikson (1968) and Blos (1967). Accordingly, an extreme lack of distinctiveness and overidentification with others is referred to as one of the core elements of impairment in personality functioning in the alternative model on personality disorders in DSM-5 (American Psychiatric Association, 2013).

Although the aforementioned theories highlight the importance of distinctiveness in various ways, they are not contradicting each other. Collectively, these theories indicate that having a distinct identity is important (i.e., motivated identity construction theory and uniqueness theory). Lacking distinctiveness could involve an absence of boundaries between the self and others, and result in psychotic symptoms (i.e., Kernberg's theory of personality organization). However, feeling too distinct from others might have negative consequences (i.e., uniqueness theory) and potentially entail the negative feeling that others would never be able to understand you (i.e., personal fable).

Empirical Evidence on Development

Selected studies on distinctiveness are listed in Table S2.1 in the supplemental materials. We found no longitudinal studies on the development of distinctiveness across adolescence and young adulthood, but some cross-sectional studies investigated mean-level, age-related, or grade-related differences. These studies varied in the measure of distinctiveness they used, with some focusing more on the

extremes and others on more moderate levels. Nevertheless, they are consistent in finding no significant age differences during adolescence (e.g., Aalsma, Lapsley, & Flannery, 2006) or young adulthood (Lopez, 2001), or between adolescence and young adulthood (e.g., Neff & McGehee, 2010). Thus, there appears to be little support for an adolescent peak in distinctiveness as was predicted by the theory on the personal fable (Elkind, 1967).

The aforementioned studies all used subjective indicators of distinctiveness. Adams-Webber (1985) used a more objective indicator, based on Kelly's (1955) repertory grid technique.[2] He showed an increase in the distinction between descriptions of self and others across childhood and adolescence. Still, all aforementioned studies on distinctiveness were cross-sectional. Longitudinal studies are necessary to provide information on the stability and developmental trajectories of distinctiveness across adolescence and young adulthood.

Empirical Evidence on the Link with Psychosocial Functioning

Many studies on distinctiveness have focused on associations with psychosocial functioning. Findings support the idea that perceiving elements of the self as distinctive is important for individuals, because distinctive elements are regarded as more self-defining (Becker et al., 2012). Other studies focused on the degree to which individuals indicate feeling overall more distinct. Some of these studies focused on normative feelings of distinctiveness (e.g., Şimşek & Yalınçetin, 2010), whereas others zoomed in on one of the extreme ends. Generally, studies assessing more extreme levels of distinctiveness also incorporate aspects of psychosocial functioning that are theorized to accompany these levels. For example, measures tapping into the personal fable of extreme uniqueness also assess feelings of being misunderstood by others (e.g., Lapsley et al., 1989). Contrary to this, an often used measure on a lack of distinctiveness also assesses dependency on others and emotional reactivity to others' emotions (Olver, Aries, & Batgos, 1989).

Assuming that these measures together represent an underlying continuum of the degree of distinctiveness, careful comparisons of these studies seem to suggest a curvilinear relationship between distinctiveness and psychosocial functioning. However, note that this pattern was inferred from studies using different measures, focusing on different degrees of distinctiveness, and examining linear associations. Findings suggested a curvilinear pattern for the association with internalizing symptoms. Studies focusing on more normative feelings of distinctiveness found a

[2] With the Repertory Test, one can study the personal constructs individuals use to distinguish people from each other. In the test, individuals specify the differences and similarities they perceive between themselves and several others from their daily lives. Based on this, the degree of distinctiveness between the self and the others can be examined.

negative association with internalizing symptoms (Şimşek & Yalınçetin, 2010). Yet, internalizing symptoms were more common among young people who reported extremely low (Ingoglia, Lo Coco, & Albiero, 2016) or extremely high distinctiveness (Aalsma et al., 2006; Goossens, Beyers, Emmen, & Van Aken, 2002; Neff & McGehee, 2010).

Furthermore, young people who reported more normative levels of distinctiveness perceived their actions as more self-endorsed and also felt more related to others (Şimşek & Yalınçetin, 2010). Lacking distinctiveness was moderately associated with making less self-endorsed choices, behaving less volitionally, and being more emotionally detached from parents (Ingoglia, Lo Coco, Liga, & Grazia Lo Cricchio, 2011). Feeling extremely distinct was also associated with processes of separation and individuation (Galanaki & Christopoulos, 2011), but more with the maladaptive processes, and less with the more adaptive processes (Goossens et al., 2002). Correspondingly, individuals who feel highly distinct feel less securely attached and more lonely (Goossens et al., 2002; Neff & McGehee, 2010). Overall, these findings suggest that having a moderate sense of distinctiveness is most adaptive for adolescents and young adults. Future studies could examine these expected curvilinear associations.

IDENTITY COHERENCE

Theoretical Models

A second important component of identity is feeling coherent across various life domains, as reflected in Erikson's (1968) notion about self-sameness across spaces. Other theories refer to coherence as role variability (Block, 1961), self-concept differentiation (Donahue, Robins, Roberts, & John, 1993), spatial integration (Van Hoof & Raaijmakers, 2003), and coherence (Pasupathi, 2014). Although some of these theories focus on coherence across roles and others across contexts, they all seem to refer to identity coherence across various identity-relevant domains. Additionally, sense of coherence has been used to refer to the more general feeling that one's life experiences and the world are coherent (Antonovsky & Sagy, 1986). In this review, we did not include studies focusing on this broad conceptualization of coherence, because we focus specifically on coherence of the self (across domains).

Young people develop their identity in various identity-relevant domains, such as education, work, friendships, and romantic relationships (e.g., Goossens, 2001; Grotevant, Thorbecke, & Meyer, 1982). However, even when an adolescent succeeds in constructing a clear identity in two different domains, this is not sufficient to achieve identity coherence across these domains (Syed & McLean, 2016). Coherence entails that these domains are integrated and that individuals perceive themselves

to be similar when engaging in them. For example, a coherent individual would not only feel extraverted and optimistic when at school, but also when playing soccer.

Identity coherence can be achieved by integrating new aspects of identities with already existing ones, and by redefining or excluding present domain-specific identities (Van Hoof & Raaijmakers, 2003). New identity domains become important during development, such as occupation during young adulthood (Arnett, 2000), which makes continuously working on the integration of new and old identity elements crucial.

During adolescence, individuals likely become aware of conflicting aspects of the self (Harter, 2012). Although these conflicts are first not experienced as problematic, from middle adolescence onwards, inconsistencies are thought to become distressing (Harter, 2012), and thus associated with psychosocial functioning. However, various perspectives exist on this link (see Donahue et al., 1993). On the one hand, having a differentiated sense of self across various domains could indicate flexibility. An individual who can adapt to the varying requirements of domains, such as being more extraverted when necessary, might function better. On the other hand, by acting differently across domains individuals could experience fragmentation. Because both extremes of coherence can have maladaptive consequences, Block (1961) expected a curvilinear association between coherence and psychosocial functioning.

Empirical Evidence on Development

Studies on coherence typically examine participants' ratings of to what extent various traits describe them in various domains. Subsequently, coherence scores are computed using principal component analysis or correlations. These scores reflects the (un)shared variance in traits across domains (e.g., Donahue et al., 1993). However, such scores might be invalid, because they also depend on irrelevant variance within domains and are confounded with mean scores on traits (Baird, Le, & Lucas, 2006). Therefore, from the studies that used these computations to assess coherence, we only selected those that used the corrected index of Baird et al. (2006). Selected studies on coherence are listed in Table S2.2 in the supplemental materials. The corrected coherence index has not yet been used in studies on the development of coherence in adolescence or young adulthood.

Another way to assess experiences of coherence is by letting individuals point out conflicting aspects of themselves across various roles (Harter & Monsour, 1992). One study using such a measure has shown that compared to early adolescents, middle adolescents were more often able to mention conflicting self-aspects (Harter & Monsour, 1992). However, more recent studies did not find age differences in the number of reported conflicting self-aspects across adolescence (e.g., Shadel, Tharp-

Taylor, & Fryer, 2009). Unfortunately, these studies had small sample sizes, which could have resulted in less reliable findings.

Empirical Evidence on the Link with Psychosocial Functioning

Various studies have examined the association between coherence and psychosocial functioning using measures that were later criticized (Baird et al., 2006). A meta-analysis including these measures, and not restricted to any age group, showed that coherence was positively linked to well-being, life satisfaction, and self-esteem, and negatively linked to depressive symptoms and anxiety (Bleidorn & Ködding, 2013). These links were stronger in samples from more individualistic countries. Van Hoof and Raaijmakers (2002) focused on adolescent samples, and also found a positive link of coherence with well-being. They further showed that linear associations better explained the relationships, compared to curvilinear associations.

These studies used non-corrected indices, which could overestimate the association with well-being (Baird et al., 2006). If these flaws are corrected for, associations with self-esteem, life satisfaction, and self-concept clarity tend to disappear (Baird et al., 2006; Dunkel, Minor, & Babineau, 2010; Fukushima & Hosoe, 2011). The negative association of coherence with negative affect was also significantly reduced when using this corrected index, resulting in small or non-significant associations (Baird et al., 2006; Dunkel et al., 2010). Yet, this corrected index of coherence was still negatively associated with narcissism (Fukushima & Hosoe, 2011). However, in a recent study, Baird, Lucas, and Donnellan (2017) have raised concerns that even when using the corrected index of coherence, it is possible that these scores are substantially affected by response style.

In sum, there is no convincing evidence for associations between coherence and psychosocial functioning. Studies have examined the adaptiveness of coherence primarily by looking at sameness across identity domains. Possibly, inconsistencies across domains are only maladaptive if they really produce a conflict between domains (Baumeister, Shapiro, & Tice, 1985). For example, an adolescent might not experience it as problematic to be more conscientious at school compared to home. However, having a same-sex romantic partner, but hiding this at school because of doubts about peer-approval, might have maladaptive influences on psychosocial functioning.

IDENTITY CONTINUITY

Theoretical Models

Erikson (1950, 1968) explained that a key asset of an identity is that it provides a sense of sameness and continuity. Continuity refers to adolescents' experience of

being the same person today, compared to what one has been in the past and will be in the future (e.g., Van Hoof, 1999). Note that continuity does not necessarily precludes change (Vignoles, Regalia, Manzi, Golledge, & Scabini, 2006). Individuals who experience certain turning points and change are still able to experience continuity of the self as well. A lack of continuity is thought to result in role confusion (Erikson, 1950). In adolescence and young adulthood, individuals experience many changes across different life domains, such as their social relationships and education. Consequently, they need to develop a new sense of sameness and continuity by establishing strong commitments within different identity domains (Arnett, 2000; Erikson, 1968).

Marcia's (1966) identity status model is the most widely used model to elaborate on Erikson's (1968) theoretical ideas and provides a way to assess identity continuity (Waterman, 1988). Marcia distinguished the two key processes of exploration and commitment. Exploration indicates to what extent individuals consider various alternative identity commitments. Commitment indicates to what extent firm choices in important identity domains have been made, and whether significant activities are conducted to implement these choices. Based on the presence/absence of exploration and commitment, individuals can be classified into four different identity statuses. The achievement status reflects strong commitments after a period of active exploration. Foreclosed individuals have made a commitment with little or no prior exploration. The moratorium status indicates that individuals have high levels of exploration, but have not yet made a commitment. Finally, diffused individuals have not engaged in active identity exploration and have not made commitments.

Marcia's (1966) identity status paradigm provided a way to classify people rather than studying how identity formation processes take place within individuals across time (Crocetti, Rubini, & Meeus, 2008; Waterman, 1982). Contemporary European dual-cycle models do aim to study the developmental process of identity formation (Crocetti et al., 2008; Luyckx, Goossens, & Soenens, 2006). These models distinguish specific exploration dimensions, such as exploration in-depth and exploration in-breadth (Crocetti et al., 2008; Luyckx et al., 2006) and specific commitment dimensions (e.g., commitment making and identification with commitments; Luyckx et al., 2006) to capture an identity *formation* cycle and an identity *maintenance* cycle.

Empirical Evidence on Development

Studies on identity continuity identified in this review are listed in Table S2.3 in the supplemental materials. Different measurements to assess identity continuity have been used. Most often, a subjective sense of identity continuity is

operationalized by measuring identity commitments. This emphasis on the assessment of identity commitments is consistent with Erikson's conceptualization that forming commitments serves the function of creating a sense of continuity during life changes and provides direction and structure for a person's future (Pasupathi, 2014). In addition, alternative measurements of identity continuity have been identified (e.g., Vignoles et al., 2006). Studies that have used these measurements will be discussed after a review on studies on identity commitments.

Meeus (2011) reviewed the literature on longitudinal research on identity commitments published between 2000 and 2010. Hence, we will extend Meeus' (2011) review by including longitudinal studies on identity commitment published after 2010. Meeus (2011) concluded from longitudinal studies on identity dimensions that during adolescence and young adulthood identity commitment increases. In addition, findings from identity status research, conducted before 2011, point to the same direction of increasing identity continuity as well. Specifically, these studies report a systematic decrease in the prevalence of identity statuses characterized by low commitment levels, and an increase in identity statuses showing high commitment levels and low identity uncertainty (Meeus, 2011). For example, the number of adolescents in identity diffusion and moratorium decreases over time, whereas the number of adolescents in identity foreclosure or achievement statuses increases during adolescence (Meeus, Van de Schoot, Keijsers, Schwartz, & Branje, 2010).

After 2010, nine additional longitudinal studies on the development of identity commitments were identified. These studies used either a dimensional approach by studying the development of separate identity dimensions (i.e., the development of identity commitment) or an identity status approach by testing over-time configurations of identity commitments, and levels of exploration, for example. Table S2.3 in the supplemental materials shows that the majority of studies on identity dimensions and identity statuses reported stable or increasing identity continuity over time. For example, using a dimensional approach, Shirai, Nakamura, and Katsuma (2016) showed that young adults' general level of identity commitments remained stable over time.

Studies focusing on identity statuses revealed that many young people can be classified in identity status trajectories characterized by high levels of commitment in adolescence (i.e., 55% in achievement or closure; Meeus, Van de Schoot, Keijsers, & Branje, 2012), as well as in young adulthood (i.e., 43% in achievement or closure; Luyckx, Klimstra, Schwartz, & Duriez, 2013b). Within these trajectories, commitment strength was generally stable across time. Furthermore, the number of adolescents in identity statuses characterized by high levels of commitments (and thus high levels of perceived continuity) further increased from early to late

adolescence (Hirschi, 2012; Meeus et al., 2012). For example, the number of identity diffused youth was significantly lower and the number of achieved youth was higher in late adolescence compared to early adolescence (Meeus et al., 2012). Thus, adolescents generally seem to maintain or further develop feelings of identity continuity through adolescence.

Whereas these studies most often assessed identity annually or biannually, recent work investigated daily identity developmental processes (Becht et al., 2016). Two trajectories, each containing about 50% of the total adolescent sample, were identified. An identity synthesis class was characterized by relatively high and stable commitment levels and low levels of daily identity reconsideration. However, the other class showed a pattern of continuously searching for identity continuity and temporal identity discontinuity. These adolescents had low levels of identity commitment that slightly decreased and subsequently increased during adolescence. In sum, findings suggest that perceived identity continuity operates at the daily level as well as across longer periods.

In addition to studies examining identity commitments to understand identity continuity, a second tradition focused more on understanding identity continuity phenomenologically. In the latter tradition, adolescents' sense of continuity is measured directly by asking participants whether they still perceive themselves to be the same person today as before, despite the fact that time passes and they are changing (e.g., Habermas & Köber, 2015; Pilarska & Suchańska, 2015a). Only one study was found that investigated mean levels of self-discontinuity (inverse coded assessment of continuity) across different age groups (Habermas & Köber, 2015). This study reported that across adolescence and young adulthood, feelings of self-discontinuity decreased. Hence, continuity increased during adolescence and young adulthood.

Together these findings indicate that adolescents and young adults who are strongly committed often maintain these high levels of commitment across the years. Moreover, some empirical findings also indicate a strengthening of commitments among adolescents with relatively weak commitments. This maintenance and strengthening of commitments might explain the increasing level of sense of continuity across adolescence and young adulthood.

Empirical Evidence on the Link with Psychosocial Functioning

Across the board, findings showed that young people who reported strong identity commitments reported the highest levels of adjustment, as concluded by Meeus (2011) as well. For example, adolescents in identity status trajectories characterized by high levels of commitments reported the lowest levels of delinquency, depressive symptoms, and anxiety (Becht et al., 2016; Meeus et al.,

2012). Moreover, both transitioning to a status characterized by high levels of commitment, as well as staying in a high-commitment status was generally associated with an increase in well-being (Hirschi, 2012). Some findings showed that strong commitments could predict relative increases in adjustment over time, such as in the quality of family relationships (Crocetti, Branje, Rubini, Koot, & Meeus, 2017). Furthermore, support was also found for reversed effects, in which diminished adjustment (e.g., delinquency) seemed to hamper the construction of strong commitments (Mercer, Crocetti, Branje, Van Lier, & Meeus, 2017).

Studies including different measures of identity continuity showed similar findings. For example, Pilarska (2014) and Pilarska and Suchańska (2015a) assessed sense of continuity with questions on the sense of constancy of the self and being the same person, despite changes going on within the person and the passage of time. They found that adolescents with higher feelings of continuity reported less negative affect, more life satisfaction, and higher sense of self-worth. Other research used a questionnaire developed by Vignoles et al. (2006) to assess identity continuity and associations with adjustment. For example, Batory (2014) showed that the more an identity element provided young adults with a sense of continuity, the more central this element was for an individual's identity as well. Batory (2015) experimentally induced a threat to identity. A near-significant effect indicated that the more the identity element provided young adults with a sense of continuity, the more positive affect they experienced in reaction to an identity threat. This finding suggests that identity continuity might buffer against potential danger to destabilize one's identity.

In sum, studies using different questionnaires to assess identity continuity indicate that those adolescents and young adults who experience identity discontinuity report having more adjustment difficulties compared to individuals who established firm commitments and feelings of identity continuity over time.

INTEGRATIVE DEVELOPMENTAL FRAMEWORK OF IDENTITY

Development of Three Identity Components

Our review discussed three core components of identity. Next, we aimed to integrate these key components into a developmental framework of identity. Regarding the development of identity, it is likely that adolescents start with questioning what distinguishes them from others. According to Pasupathi (2014), distinctiveness indeed provides a foundation from which identity coherence and continuity can develop. This notion is further supported by the fact that a rudimentary sense of distinctiveness from others already develops in childhood (see Harter, 2012). Moreover, one could argue that in order to experience coherence and continuity, one first needs to have a sense of "I". The reviewed studies showed

that across adolescence and young adulthood, no significant age differences exist in mean levels of distinctiveness. This supports the idea that for most individuals a sense of distinctiveness is already established at the start of adolescence.

Distinctiveness can be considered foundational, but all three components might strengthen each other equally later in adolescence. Feeling the same person across contexts and time may also contribute to feeling more distinctive. If distinctiveness is foundational for identity formation in early adolescence and later strengthened by the construction of coherence and continuity, distinctiveness should be associated with coherence and continuity. So far, only three cross-sectional studies with young adults examined these associations. Findings indicated that distinctiveness was weakly or not significantly associated with continuity (Pilarska, 2014; Pilarska & Suchańska, 2015a) and not significantly associated with coherence (Pilarska & Suchańska, 2015b). In this latter study, a coherence index that is confounded with mean scores on traits was used, but as this index is known for overestimating adjustment it seems unlikely that a corrected index would result in a significant association. However, these studies only focused on linear associations with more normative feelings of distinctiveness. It is possible that an optimal dose effect of distinctiveness on coherence and continuity exists, with levels of distinctiveness that are too high jeopardizing feelings of coherence and continuity. For example, feeling highly distinct can be uncomfortable and could therefore trigger reconsideration of aspects of one's identity. To detect such effects, future studies need to examine non-linear associations between identity components.

Concerning the linkages between coherence and continuity, Van Hoof and Raaijmakers (2002) indicated that identity coherence is a necessary condition before one can develop a sense of continuity because by moving through time, one will be active in various domains. Although this may be true, a general sense of continuity as provided by commitments might also provide a good starting point to align identities across different domains into a coherent whole.

Our review showed mixed empirical evidence for the development of coherence across adolescence. Although there seems to be an increase during adolescence in the awareness of conflicting aspects (Harter & Monsour, 1992), this finding was not replicated (e.g., Shadel et al., 2009). Moreover, consistent with a previous review (Meeus, 2011), our review showed that many adolescents already reported to have formed strong identity commitments. Furthermore, our review indicates that when adolescents have formed strong commitments, they often stay strongly committed over time. Adolescents' commitments are more stable than their levels of reconsideration (Becht et al., 2017). Similarly, a recent review by Meeus (2018), reported heterogeneity in stability of identity statuses in adolescence. Specifically, less than half of the adolescents in achievement and closure status

changed, whereas the majority of adolescents in diffusion and moratorium changed across waves. These findings further support that already in adolescence, firm identity commitments are made that might provide young people with a sense of continuity and structure. These early strong and stable identity commitments indicate that continuity not only emerges after coherence has been constructed.

Furthermore, there is not yet strong empirical evidence for a link between the formation of coherence and continuity (Dunkel et al., 2010). Although some studies have focused on the development of domain-specific commitments (e.g., Becht et al., 2016), the integration of these domain-specific identity commitments, fostering identity coherence, has received less attention. Future studies should investigate the challenges that young people face in integrating domain-specific commitments, and how these affect their sense of continuity and vice versa.

In sum, the few studies on associations between the identity components did not find convincing evidence for linkages between the three components and are all cross-sectional. Future longitudinal studies are needed to test whether the three components strengthen each other over time. Moreover, it could be tested whether associations of distinctiveness with the other components are moderated by age. If distinctiveness really provides a foundation for the development of coherence and continuity, it should more strongly predict increases in coherence and continuity in early adolescence. However, from late adolescence onwards, linkages might become more bidirectional. Related to developmental timing, longitudinal studies are able to inform us about the time interval at which these effects occur and how the timing of the effects might differ for the content of identity versus the structure of identity. For example, identity content may be constructed in daily lives (Pasupathi, Mansour, & Brubaker, 2007) at the so-called micro level (Lichtwarck-Aschoff, van Geert, Bosma, & Kunnen, 2008). In contrast, the development of the structure of identity, such as feelings of coherence and continuity might take longer to develop. However, whether this is the case remains an empirical question. Therefore, future studies are needed to test how identity formation processes develop and affect each other by examining these links at different time scales (e.g., Lichtwarck-Aschoff et al., 2008).

In addition to testing developmental trajectories and linkages between identity distinctiveness, coherence, and continuity across adolescence and young adulthood, it should be mentioned that individuals are embedded in specific historical, cultural, and economic conditions (Baltes, 1987). These different conditions might result in variations between individuals in different contexts and between different generations. For example, findings have shown that the period of searching for commitments is longer in Italy, compared to the Netherlands (Crocetti, Schwartz, Fermani, Klimstra, & Meeus, 2012). This might partly be caused by a relatively unstable job market in Italy, which might make it harder for young people to commit

to a certain occupational domain, for example. In addition, this difference might result from different cultural expectations about the transition to adulthood, which is expected to happen relatively late in Italy compared to the Netherlands. Hence, new studies remain vital for examining whether adolescents and young adults in different contexts differ in their developmental trajectories of identity distinctiveness, coherences, and continuity.

Links with Psychosocial Functioning

If distinctiveness, coherence, and continuity are all different components of identity, they should have some overlap but also incremental value in their prediction of psychosocial functioning. Because distinctiveness is thought to form the foundation of identity formation, it might have the strongest link with psychosocial functioning. The fact that this component is represented the most in theories on pathological identity formation further supports this idea. Our review also showed various small to large associations of distinctiveness with psychosocial functioning. Importantly, one study by Pilarska (2014) even showed that feelings of distinctiveness were predictive of positive affect when controlling for feelings of continuity, supporting the idea that distinctiveness may be especially indicative of identity problems.

Our review showed that coherence was less strongly related to psychosocial functioning when using a corrected index. Possibly, the degree of conflict between domains instead of dissimilarity is associated more strongly with psychosocial functioning. Thus, future studies should try to examine between-domain conflict as an alternative operationalization of identity (in)coherence, thereby potentially building on existing knowledge on, for example, work-family conflict (Allen, Herst, Bruck, & Sutton, 2000).

For identity continuity, we found consistent positive associations of experiencing identity continuity with adaptive psychosocial functioning. Clearly, those adolescents and young adults who have developed a stronger sense of continuity have more favorable adjustment outcomes. Interestingly, continuity appeared to uniquely predict psychosocial functioning, after controlling for coherence (Van Hoof & Raaijmakers, 2002).

Future research, including extensive measures of all three components of identity, should further investigate whether these components predict different aspects of psychosocial functioning and whether they have incremental value over each other in these associations. For this, longitudinal studies would be especially valuable, because these can be informative on whether problems in identity formation precede maladaptive functioning or vice versa.

CONCLUSION

The aim of this systematic review was to create awareness among researchers that identity can be studied focusing on the three different components of distinctiveness, coherence, and continuity. Because these components reside in largely separate literatures, we provided an overview of theories and empirical studies on each component and explained how they are linked to each other. Empirical evidence suggests that these components differ in their development and their links with psychosocial functioning. By bringing together three key identity components and proposing hypotheses on how they are linked in a developmental framework, we hope to stimulate more inclusive research on identity, in which, the now mostly separated fields and approaches will be united.

Table S2.1 | Empirical Studies on Distinctiveness

Authors	Sample	Age	Measure distinctiveness	Associations with psychosocial functioning	Findings development
Aalsma et al. (2006)	6th graders, *N* = 94 8th graders, *N* = 223 10th graders, *N* = 142 12th graders, *N* = 102	*M* =11.4, *SD* = 0.6 *M* =13.4, *SD* = 0.6 *M* =15.4, *SD* = 0.7 *M* =17.5, *SD* = 0.7	NPFS Personal uniqueness	• Depressive symptoms: *r* = .33* • Various measures of suicidal ideation, *r*s = .25* to .33* • Narcissism, *r* = -.03 • Risk behaviors, *r* = .03 • Substance use frequency, *r* = .10 • Life time drug use, *r* = .10* • Self-worth, *r* = -.23* (6-8th graders) and *r* = -.34* (10-12th graders)	• No significant difference between grades.
Alberts et al. (2007)	Middle school students: grade 6, *N* = 34, grade 7, *N* = 41, grade 8, *N* = 44	*M* = 13.4, *SD* = 1.1 Min. 11	PF speciality		• No significant difference between grades 6, 7, and 8.
Beaudoin et al. (2006)	Boys diagnosed with a behavioral disorder, *N* = 29, and without, *N* = 30	12-17	NPFS Personal uniqueness	• No significant difference between boys with and without a diagnosis of behavioral diagnosis, *d* = .36.	
Becker et al. (2012)	Late adolescents, *N* = 5,158	*M* = 16.7, Max 24	Generation and rating of 10 identity aspects, based on Twenty Statements Test	• Ratings of distinctiveness were positively associated with ratings of centrality and positive affect.	

Demir et al. (2013)	Three university student samples: S1: *N* = 1,228 S2: *N* = 477 S3: *N* = 724	 *M* = 18.8, *SD* = 2.5 *M* = 18.9, *SD* = 1.9 *M* = 18.7, *SD* = 1.9	PSU	For the three samples, respectively: • Happiness, βs = .45*, .41*, and .38* • Friendship quality: βs = .38*, .39*, and .36*	
Fox et al. (2009)	Young adult women with symptoms of anorexia nervosa, *N* = 31 Young adult women, *N* = 26 Adolescent girls, *N* = 71	18-30 18-30 *M* = 16.9, *SD* = 0.3	PUS	• Women with symptoms of anorexia nervosa had more doubts about being the same (i.e., felt more distinct) than the adolescent group.*	• No significant difference between adolescent and young women control group.
Galanaki (2012)	Secondary school students in: Grade 7, *N* = 71 Grade 9, *N* = 83 Grade 11, *N* = 84 Grade 12, *N* = 76	 *M* = 12.4 *M* = 14.4 *M* = 16.4 *M* = 17.3	NPFS Personal uniqueness & PF speciality		• No significant difference between grades.
Galanaki et al. (2011)	Secondary school students, *N* = 297, in: Grade 7, *N* = 71 Grade 9, *N* = 66 Grade 11, *N* = 84 Grade 12, *N* = 76	11-18 *M* = 12.4 *M* = 14.4 *M* = 16.4 *M* = 17.3	NPFS Personal uniqueness & PF speciality	For both subscales, respectively: • General separation-individuation, *r*s = .42* and .24* • Specifically with: o Engulfment anxiety, *r*s = .22* and .09 o Narcissistic strivings, *r*s = .27* and .23* o Denial of attachment needs, *r*s = .25* and .15* o Separation anxiety, *r*s =.00 and .20* o Healthy separation, *r*s = .17* and .17* o Expectation of rejection by others, *r*s = .41* and .18*	• No significant difference between grades.

Table S2.1 Continued

Authors	Sample	Age	Measure distinctiveness	Associations with psychosocial functioning	Findings development
Goossens et al. (2002)	High school students, *N* = 1,458	Grades 8 (*M* = 13,1) to 12 (*M* = 17,8)	NPFS Personal uniqueness	• Connectedness, *r*s = -.06, -.07, and -.11* • Separation, *r*s = .19*, .06, and .22* • Healthy individuation, *r* = .04 • Depression, *r* = .18* • Loneliness, *r* = .15*	
Ingoglia et al. (2016)	High school and college students, *N* = 649	18-30	SODS	• Emotional fragility, *r* = -.41*	
Ingoglia et al. (2011)	Secondary school students, *N* = 331	16-19	SODS	• Internalizing problem behavior, *r* = -.46* • Externalizing problem behavior, *r* = -.07 • Attitudinal autonomy, *r* = .41* • Functional autonomy, *r* = .39* • Independence from parents, *r* = .11 • Emotional closeness, *r* = .01 • Conflicts with parents, *r* = -.15 • In a model: distinctiveness predicted emotional detachment from parents, β = .31*, but not emotional separation, β = .11	
Koydemir et al. (2014)	College students, *N* = 370	18-29	PSU	• Ontological well-being: β = .50*, controlled for extraversion and openness	
Lo Coco et al. (2014)	Young adults, (73% university students, 22% workers), *N* = 649	19-29	SODS	• Emotional fragility, *r* = -.29*	

Lopez (2001)	University students, *N* = 247	*M* = 19.5, *SD* = 1.2	SODS	• Attachment anxiety, *r* = -.50* • Attachment avoidance, *r* = .02 • Self-splitting, *r* = -.40* • Other-splitting, *r* = .15* • Emotional empathy (i.e., reactivity), *r* = -.34* • Controlling for all these variables, social desirability, and self-concealment, it was still a significant predictor of self-splitting, β = -.11*, but not other-splitting, β = .08.	• Not associated with age, *r* = .09.
Neff et al. (2010)	Adolescents, *N* = 235 Young adults, *N* = 287	14-17 19-24	NPFS Personal uniqueness (adapted)	For adolescents and young adults, respectively: • Depressive symptoms, *r*s = .35* and .40* • Anxiety, *r*s = .35* and .38* • Connectedness, *r*s = -.51* and -.46* • Secure attachment, *r*s = -.24* and -.43* • Preoccupied attachment, *r*s = .16* and .07 • Fearful attachment, *r*s = .29* and .39* • Dismissive attachment, *r*s = .06 and .14* • Controlling for self-compassion reduced the prediction of well-being (less depressive and anxiety symptoms and more connectedness) from β = -.46* to β = -.29*.	• No difference between adolescents and young adults, η^2 = .00.
Pilarska (2014)	University students, *N* = 226	18-28	MQI specificity	• Negative affect, *r* = -.20* • Positive affect, *r* = .48* • Life satisfaction, *r* = .31*	

Table S2.1 Continued

Authors	Sample	Age	Measure distinctiveness	Associations with psychosocial functioning	Findings development
Pilarska et al. (2015)	Young adults, *N* = 228	18-35	MQI uniqueness	• Sense of self-worth, *r* = .43*	
Şimşek et al. (2013)	University students, *N* = 290	*M* = 19.1, *SD* = 3.1	PSU	• Happiness, *r* = .54* • Basic psychological need satisfaction (autonomy, competence, and relatedness), *r* = 61* • Hedonic balance, *r* = .40* • In a model, controlling for associations between variables, distinctiveness did not predict happiness, β = .06, or hedonic balance, β = .08, but did predict basic psychological need satisfaction, β = .30*.	
Şimşek et al. (2014)	Turkish university students, *N* = 411 American college students, *N* = 370	*M* = 19.5, *SD* = 1.8 *M* = 19.0, *SD* = 2.8	PSU	For Turkish and American students, respectively: • Short-term happiness, *r*s = .30* and .44* • General happiness, *r*s = .48* and .56*	
Şimşek et al. (2010)	Study 5: University students, *N* = 148	18-24	PSU	• Anxiety, *r* = -.29* • Depression, *r* = -.27* • Self-esteem, *r* = .65* • Autonomy, *r* = .59* • Relatedness, *r* = .41* • Competence, *r* = .58* • Life satisfaction, *r* = .53*	

Note. NPFS = New Personal Fable Scale, PF = Personal Fable, PSU scale = Personal Sense of Uniqueness scale, PUS = Personal Uniqueness Scale, SODS = Self-Other Differentiation Scale, MQI = Multidimensional Questionnaire of Identity.
* $p < .05$.

Table S2.2 | Empirical Studies on Coherence

Authors	Sample	Age	Measure coherence	Associations with psychosocial functioning[1]	Findings development
Baird et al. (2006)	Study 1: First-year psychology students, *N* = 270	18-25	Coherence of attributes across six roles: student, friend, romantic partner, family member, worker, and stranger	• Positive affect, *r* = -.02 • Negative affect, *r* = -.03 • Life satisfaction, *r* = .03	
	Study 2: University students, *N* = 105	17-20	Same as Study 1	• Positive affect, *r* = .01 • Negative affect, *r* = -.09 • Life satisfaction, *r* = .09	
	Study 3: University students, *N* = 150	18-25	Same as Study 1	• Positive affect, *r* = .06 • Negative affect, *r* = -.20* • Life satisfaction, *r* = .11	
Baird et al. (2011)	Study 2: University students, *N* = 524		Coherence between general self and five roles: friend, romantic partner, family, student and worker	• Life satisfaction, *r* = .32*	
Baird et al. (2017)	Study 1: University students, *N* = 149		Coherence across four roles: friend, family member, romantic partner, and student	• Self-concept clarity, *r* = .11 • Relationship satisfaction, *r* = -.01	
	Study 2: University students, *N* = 252		Coherence across six roles	• Life satisfaction, *r* = .04 • Positive affect, *r* = .02 • Negative affect, *r* = -.06 • Daily positive affect, *r* = .03 • Daily negative affect, *r* = -.16* • Self-esteem, *r* = -.02 • Depression, *r* = -.07 • Anxiety, *r* = -.11	

Table S2.2 Continued

Authors	Sample	Age	Measure coherence	Associations with psychosocial functioning[1]	Findings development
Dunkel et al. (2010)	College students, *N* = 431	17-25	Coherence across interaction with friend, parent, professor, and stranger	• Self-esteem, *r* = .10 • Sadness, *r* = -.14* • Hostility, *r* = -.22* • Identity commitment, *r* = .00	
Fukushima et al. (2011)	University students, *N* = 168	18-23	Coherence across five roles (if applicable): student, friend, romantic partner, son or daughter, and employee	• Narcissism, *r* = -.27* • Self-concept clarity, *r* = .11 • Self-esteem, *r* = .09	
Harter et al. (1992)	Secondary school students: Grade 7, *N* = 24 Grade 9, *N* = 20 Grade 11, *N* = 20	 *M* = 13,2 *M* = 15,1 *M* = 17,2	Self-opposites and conflicts across being with parents, friends, in the classroom, and in romantic relationships		• *N* of opposites differed between the three grades.* Largest difference between grade 7 and 9, but not significant. • *N* of opposites in conflict: Grade 7 < Grade 9 and 10.* • % of opposites in conflict differed not significantly. • % of subjects reporting at least one conflict: Grade 7 < Grade 9 and 10.*
Shadel et al. (2004)	Early adolescents, *N* = 45 Middle adolescents, *N* = 56	11-13 14-17	Self-conflicts across being with friends, mother, father, best friend, romantic interest, in the classroom.		• Early and middle adolescents did not differ significantly on *n* of self-conflicts.

Shadel et al. (2008)	Adolescents, *N* = 87	11-17 *M* = 13.7, *SD* = 2.0	Same as Shadel et al. (2004)	• Age, *r* = .20
Shadel et al. (2009)	Adolescents, *N* = 85	*M* = 13.8, *SD* = 1.8	Same as Shadel et al. (2004)	• Age, *r* = .00

Note. [1] Measures and original scores differ on whether they focus on coherence or incoherence. Presented results are adjusted, and all refer to coherence.
* $p < .05$.

Table S2.3 | Empirical Studies on Continuity [a]

Authors	Sample	Age	Measure continuity	Associations with psychosocial functioning	Findings development
Batory (2014)	Young adults, *N* = 70	19-29	Identity Questionnaire	• Continuity predicted change in identity centrality, β = .12***, but not in positive affect, β = -.01, and identity enactment, β = .04.	
Batory (2015)	Young adults, *N* = 62	20-26	Identity Questionnaire	• Experimentally induced threat to identity predicted (near significant trend) stronger positive affect especially when identity continuity was high.	
Becht et al. (2016)	Early to late adolescents, *N* = 494	13-18	Identity classes based on: • U-MICS commitment • U-MICS reconsideration	• Educational identity crisis class (relative to educational identity synthesis class) related to: intercept of anxiety, *r* = .23*** and intercept of aggression, *r* = .23***. • Interpersonal identity crisis class (relative to interpersonal identity synthesis class) related to: intercept of anxiety, *r* = 18** and intercept of aggression, *r* = .13*.	• Identity commitment in identity crisis classes significantly lower across adolescence. • Stable commitments in identity synthesis class. U-shaped development of commitment in crisis classes.
Becht et al. (2017)	Early to late adolescents, *N* = 494	13-18	U-MICS commitment		• Within-person stability of interpersonal and educational commitment was strong, *r*s = .60*** to .67*** and *r*s = .56*** to .63***, respectively.

Crocetti et al. (2017)	Adolescents, *N* = 497	13-18	U-MICS commitment	• Stronger commitments predicting dimensions of relationship quality 1-year later: o Maternal support: β = .05** o Maternal negative interaction: β = -.05** o Sibling power: β = -. 06** • Predictions of paternal support, paternal negative interactions, paternal power, maternal power, sibling support, sibling negative interactions, and inverse predictions were not significant.	
Crocetti et al. (2013)	Middle to late adolescents, *N* = 443	14-18	U-MICS commitment	• Boys and girls at risk for externalizing symptoms reported difficulties in forming strong commitments (either in the level of commitment or in the development over time).	
Habermas et al. (2015)	*N* = 150	16-69	Self-discontinuity		• Self-discontinuity decreased across age groups (16 to 44 years).

Table S2.3 Continued

Authors	Sample	Age	Measure continuity	Associations with psychosocial functioning	Findings development
Hirschi (2012)[b]	Early to middle adolescents, *N* = 269, and middle to late adolescents, *N* = 230	13-17 16-20	Career Maturity Inventory & Vocational Identity Scale to measure commitment Identity statuses based on: • Career Maturity Inventory or Vocational Identity Scale • Career Exploration Scale	• Commitment and well-being, *r* = .30*** (T1) and *r* = .44*** (T2) • After controlling for socio-demographics and personality traits, identity status change patterns explained relative changes in well-being.*** o D → M and F → M predicted a decrease, βs = .13* and -.113*, respectively. o D → A, D → F, and M → A, predicted an increase, βs = .15**, .13**, and .13**, respectively. o A → A, A → F, and F → A, predicted an increase, βs = .20***, .19***, and .14**, respectively. o The other 8 patterns were not significant.	• 4 identity statuses were identified (A, F, M, D). 42% of students showed progressive change in identity statuses. 37% remained in the same status.
Kunnen (2010)	University students, *N* = 30	18-23	Identity trajectories based on: • U-GIDS commitment • U-GIDS exploration		• Across participants and six domains, based on the level of commitment and exploration 36.1% trajectories showed a pattern of above average commitment levels and above average levels of exploration. The searcher type (low and stable commitment and high and stable exploration) was least common (8.9%).

Luyckx et al. (2013a)	Sample 1: early to middle adolescents, *N* = 662	14-18 at T1	DIDS commitment making DIDS identification with commitment	• Commitment dimensions did not predict self-esteem. • Self-esteem predicted identification with commitment β = .09*, but not commitment making.	
	Sample 2: University students, *N* = 565	17-22 at T1	DIDS commitment making DIDS identification with commitment	• Commitment making predicted self-esteem, βs = .05*, and identification with commitment predicted self-esteem, βs = .05*. • Self-esteem predicted commitment making, βs = .05*, and identification with commitment, βs = .09***.	
	Sample 3: University students, *N* = 413	17-24 at T1	DIDS commitment making DIDS identification with commitment	• Only identification with commitment predicted self-esteem, β =.16***. • Self-esteem predicted commitment making, β =.11* and identification with commitment, βs between .13* and .17***.	
Luyckx et al. (2013b)	Sample 1: University students, *N* = 456	17-29 at T1	Identity statuses based on: • DIDS commitment making • DIDS identification with commitment • DIDS exploration in breadth • DIDS exploration in depth • DIDS ruminative exploration	• Individuals in achievement trajectory classes showed the highest identity centrality, compared to the other identity classes. • Individuals in achievement and foreclosure trajectory classes showed lowest depressive symptoms and highest levels of self-esteem, compared to the other identity classes.	• 5 identity status trajectories were identified (achievement, foreclosure, moratorium, carefree diffusion, troubled diffusion). 43% of university students were in high continuity identity status trajectory classes (i.e., achievement, foreclosure).

Table S2.3 Continued

Authors	Sample	Age	Measure continuity	Associations with psychosocial functioning	Findings development
Meeus et al. (2012)[b]	Early to middle, *N* = 923 and middle to late adolescents, *N* = 390	12-16 at T1 16-20 at T1	Identity statuses based on: • U-MICS commitment • U-MICS exploration in-depth • U-MICS reconsideration	In total sample: • Individuals in A and EC showed lower levels of depression and delinquency, compared to M and D.	• 5 identity status trajectories were identified (A, EC, SM, M, D). 53.6% of early-to-middle adolescents, and 60.0% of middle-to-late adolescents were in high continuity identity status trajectory classes (i.e., achievement, foreclosure). • The number of A was significantly higher and D was lower in middle and late adolescence compared to early to middle adolescence.
Mercer et al. (2017)	Early to late adolescents, *N* = 497	14-18	U-MICS commitment	• Delinquency predicted commitment one year later, β = -.12*, but commitment did not predict delinquency, β = -.02.	
Negru-Subtirica et al. (2015)	Early to late adolescents, *N* = 1151	13-19	VISA	• Bidirectional over time effects between career adaptability and vocational commitment, βs between .05* and .10***.	• Vocational commitment making was stable, identification with vocational commitment decreased during one academic year.
Negru-Subtirica et al. (2016)	Early to middle adolescents, *N* = 1062	13-15	DIDS commitment making DIDS identification with commitment	• Only identification with commitment predicted presence of meaning 3 to 4 months later, β =.11**. • Presence of meaning predicted more commitment making, β = .15***, and identification with commitment, β =.17***.	

Pilarska (2014)	University students, *N* = 226	18-28	MQI	• Correlations between continuity and negative affect, *r* = -.22***, satisfaction with life, *r* = .23***, and positive affect, *r* = .13.	
Pilarska et al. (2015)	Young adults, *N* = 228	18-35	MQI	• Correlations between continuity and sense of self- worth, *r* = .50***, exploration in-breadth, *r* = -.26***, exploration in-depth, *r* = -.19**, ruminative exploration, *r* = -.38***, commitment making, *r* = .37***, and identification with commitment, *r* = .32***.	
Pop et al. (2016)	Early to late adolescents *N* = 1151	13-19	U-MICS commitment	• Academic achievement predicted educational commitment, β = .09***, but not vice versa.	• Educational identity commitment decreased during one academic year.
Schwartz et al. (2011)	Early adolescents, *N* = 580	11-15 at T1	U-MICS commitment	• Commitment predicted self-concept clarity the next day, β =.09**, and self-concept clarity predicted commitment, β =.07**. • Daily fluctuations in commitment predicted fluctuations in self-concept clarity, βs = .08* to .09*, but not vice versa. • Daily fluctuations in commitment did not predict anxiety or depression and vice versa.	

Table S2.3 Continued

Authors	Sample	Age	Measure continuity	Associations with psychosocial functioning	Findings development
Shirai et al. (2016)	Young adults, *N* = 232	24-30	ISS commitment	• The intercept of commitment related to the intercept of delay of gratification, *r* = .38**, and the intercept of unconcern for the future, *r* = -.43**. • Increasing commitment was related to increasing delay of gratification, *r* = .47** and a decreasing unconcern for the future, *r* = -.96**	• Commitment and crisis were stable over time.
Van Doeselaar et al. (2016)	Adolescents *N* = 464	13-18	U-MICS commitment	• Commitment varied in association with balanced relatedness in friendship, *r*s = .06 to .24***. • Commitment did not predict balanced relatedness across one-year intervals, and vice versa.	

Note. U-MICS = Utrecht Management of Identity Commitments Scale, U-GIDS = Utrecht-Groningen Identity Development Scale, DIDS = Dimensions of Identity Development Scale, VISA = Vocational Identity Status Assessment, MQI = Multidimensional Questionnaire of Identity, ISS = Identity Status Scale.

[a] Because longitudinal studies on identity commitment have already been reviewed until 2010 by Meeus (2011), only longitudinal studies on identity commitment from 2011 onwards are included in this table.

[b] D = diffusion, M = moratorium, SM = searching moratorium, EC = early closure, A = achievement.

*p < .05. **p < .01. ***p < .001.

REFERENCES

References marked with an asterisk indicate studies included in the systematic review.

*Aalsma, M. C., Lapsley, D. K., & Flannery, D. J. (2006). Personal fables, narcissism, and adolescent adjustment. *Psychology in the Schools, 43*, 481-491. doi:10.1002/pits.20162

Adams-Webber, J. (1985). Self-other contrast and the development of personal constructs. *Canadian Journal of Behavioural Science/Revue Canadienne des Sciences du Comportement, 17*, 303-314. doi:10.1037/h0080042

*Alberts, A., Elkind, D., & Ginsberg, S. (2007). The personal fable and risk-taking in early adolescence. *Journal of Youth and Adolescence, 36*, 71-76. doi:10.1007/s10964-006-9144-4

Allen, T. D., Herst, D. E., Bruck, C. S., & Sutton, M. (2000). Consequences associated with work-to-family conflict: A review and agenda for future research. *Journal of Occupational Health Psychology, 5*, 278-308. doi:10.1037/1076-8998.5.2.278

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.

Antonovsky, H., & Sagy, S. (1986). The development of a sense of coherence and its impact on responses to stress situations. *The Journal of Social Psychology, 126*, 213-226.

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*, 469-480. doi:10.1037/0003-066x.55.5.469

*Baird, B. M., Le, K., & Lucas, R. E. (2006). On the nature of intraindividual personality variability: Reliability, validity, and associations with well-being. *Journal of Personality and Social Psychology, 90*, 512-527. doi:10.1037/0022-3514.90.3.512

*Baird, B. M., & Lucas, R. E. (2011). " ... And How About Now?": Effects of Item Redundancy on Contextualized Self-Reports of Personality. *Journal of Personality, 79*, 1081-1112. doi:10.1111/j.1467-6494.2011.00716.x

*Baird, B. M., Lucas, R. E., & Donnellan, M. B. (2017). The role of response styles in the assessment of intraindividual personality variability. *Journal of Research in Personality, 69*, 170-179. doi:10.1016/j.jrp.2016.06.015

Baltes, P. B. (1987). Theoretical propositions of life-span developmental psychology: On the dynamics between growth and decline. *Developmental Psychology, 23*, 611-626. doi:10.1037/0012-1649.23.5.611

*Batory, A. (2014). Reorganization of personal identity in the context of motivational dynamics and internal dialogical activity. *Scandinavian Journal of Psychology, 55*, 362-370. doi:10.1111/sjop.12125

*Batory, A. M. (2015). What self-aspects appear significant when identity is in danger? Motives crucial under identity threat. *Journal of Constructivist Psychology, 28*, 166-180. doi:10.1080/10720537.2014.923353

Baumeister, R. F., Shapiro, J. P., & Tice, D. M. (1985). Two kinds of identity crisis. *Journal of Personality, 53*, 407-424. doi:10.1111/j.1467-6494.1985.tb00373.x

*Beaudoin, K. M., & Schonert-Reichl, K. A. (2006). Epistemic reasoning and adolescent egocentrism: Relations to internalizing and externalizing symptoms in problem youth. *Journal of Youth and Adolescence, 35*, 999-1014. doi:10.1007/s10964-006-9054-5

*Becht, A. I., Nelemans, S. A., Branje, S. J., Vollebergh, W. A., Koot, H. M., Denissen, J. J. A., & Meeus, W. H. (2016). The quest for identity in adolescence: Heterogeneity in daily identity formation and psychosocial adjustment across 5 years. *Developmental Psychology, 52*, 2010-2021. doi:10.1037/dev0000245

*Becht, A. I., Nelemans, S. A., Branje, S. J. T., Koot, H. M., Vollebergh, W. A. M., & Meeus, W. H. J. (2017). Identity uncertainty and commitment making across adolescence: Five-year within-person associations using daily identity reports. *Developmental Psychology, 53*, 2103-2112. doi:10.1037/dev0000374

*Becker, M., Vignoles, V. L., Owe, E., Brown, R., Smith, P. B., Easterbrook, M., . . . Yamakoglu, N. (2012). Culture and the distinctiveness motive: Constructing identity in individualistic and collectivistic contexts. *Journal of Personality and Social Psychology, 102*, 833-855. doi:10.1037/a0026853

Bleidorn, W., & Ködding, C. (2013). The divided self and psychological (mal) adjustment - A meta-analytic review. *Journal of Research in Personality, 47*, 547-552. doi:10.1016/j.jrp.2013.04.009

Block, J. (1961). Ego identity, role variability, and adjustment. *Journal of Consulting Psychology, 25*, 392-397. doi:10.1037/h0042979

Blos, P. (1967). The second individuation process of adolescence. *The Psychoanaltic Study of the Child, 22*, 162-186. doi:10.1080/00797308.1967.11822595
*Crocetti, E., Branje, S., Rubini, M., Koot, H. M., & Meeus, W. (2017). Identity processes and parent–child and sibling relationships in adolescence: A five-wave multi-informant longitudinal study. *Child Development, 88*, 210-228. doi:10.1111/cdev.12547
*Crocetti, E., Klimstra, T. A., Hale, W. W., Koot, H. M., & Meeus, W. (2013). Impact of early adolescent externalizing problem behaviors on identity development in middle to late adolescence: A prospective 7-year longitudinal study. *Journal of Youth and Adolescence, 42*, 1745-1758. doi:10.1007/s10964-013-9924-6
Crocetti, E., Rubini, M., & Meeus, W. (2008). Capturing the dynamics of identity formation in various ethnic groups: Development and validation of a three-dimensional model. *Journal of Adolescence, 31*, 207-222. doi:10.1016/j.adolescence.2007.09.002
Crocetti, E., Schwartz, S. J., Fermani, A., Klimstra, T., & Meeus, W. (2012). A cross-national study of identity status in Dutch and Italian adolescents. *European Psychologist, 17*, 171-181. doi:10.1027/1016-9040/a000076
*Demir, M., Şimşek, Ö. F., & Procsal, A. D. (2013). I am so happy 'cause my best friend makes me feel unique: Friendship, personal sense of uniqueness and happiness. *Journal of Happiness Studies, 14*, 1201-1224. doi:10.1007/s10902-012-9376-9
Donahue, E. M., Robins, R. W., Roberts, B. W., & John, O. P. (1993). The divided self: Concurrent and longitudinal effects of psychological adjustment and social roles on self-concept differentiation. *Journal of Personality and Social Psychology, 64*, 834-846. doi:10.1037/0022-3514.64.5.834
*Dunkel, C. S., Minor, L., & Babineau, M. (2010). The continued assessment of self-continuity and identity. *The Journal of Genetic Psychology, 171*, 251-261. doi:10.1080/00221325.2010.483699
Elkind, D. (1967). Egocentrism in adolescence. *Child Development, 38*, 1025-1034. doi:10.2307/1127100
Erikson, E. H. (1950). *Childhood and society*. New York, NY: Norton.
Erikson, E. H. (1968). *Identity: Youth and crisis*. New York, NY: Norton.
*Fox, A., Harrop, C., Trower, P., & Leung, N. (2009). A consideration of developmental egocentrism in anorexia nervosa. *Eating Behaviors, 10*, 10-15. doi:10.1016/j.eatbeh.2008.10.001
*Fukushima, O., & Hosoe, T. (2011). Narcissism, variability in self-concept, and well-being. *Journal of Research in Personality, 45*, 568-575. doi:10.1016/j.jrp.2011.07.002
*Galanaki, E. P. (2012). The imaginary audience and the personal fable: A test of Elkind's theory of adolescent egocentrism. *Psychology, 3*, 457-466. doi:10.4236/psych.2012.36065
*Galanaki, E. P., & Christopoulos, A. (2011). The imaginary audience and the personal fable in relation to the separation-individuation process during adolescence. *Psychology: The Journal of the Hellenic Psychological Society, 18*, 85-103.
Goossens, L. (2001). Global versus domain-specific statuses in identity research: A comparison of two self-report measures. *Journal of Adolescence, 24*, 681-699. doi:10.1006/jado.2001.0438
*Goossens, L., Beyers, W., Emmen, M., & Van Aken, M. A. (2002). The imaginary audience and personal fable: Factor analyses and concurrent validity of the "new look" measures. *Journal of Research on Adolescence, 12*, 193-215. doi:10.1111/1532-7795.00031
Grotevant, H. D., Thorbecke, W., & Meyer, M. L. (1982). An extension of Marcia's Identity Status Interview into the interpersonal domain. *Journal of Youth and Adolescence, 11*, 33-47. doi:10.1007/BF01537815
*Habermas, T., & Köber, C. (2015). Autobiographical reasoning in life narratives buffers the effect of biographical disruptions on the sense of self-continuity. *Memory, 23*, 664-674. doi:10.1080/09658211.2014.920885
Harter, S. (2012). *The construction of the self: Developmental and sociocultural foundations* (2nd ed.). New York, NY: Guilford.
*Harter, S., & Monsour, A. (1992). Development analysis of conflict caused by opposing attributes in the adolescent self-portrait. *Developmental Psychology, 28*, 251-260. doi:10.1037/0012-1649.28.2.251
*Hirschi, A. (2012). Vocational identity trajectories: Differences in personality and development of well-being. *European Journal of Personality, 26*, 2-12. doi:10.1002/per.812
*Ingoglia, S., Lo Coco, A., & Albiero, P. (2016). Development of a Brief Form of the Interpersonal Reactivity Index (B–IRI). *Journal of Personality Assessment, 98*, 461-471. doi:10.1080/00223891.2016.1149858

*Ingoglia, S., Lo Coco, A., Liga, F., & Grazia Lo Cricchio, M. (2011). Emotional separation and detachment as two distinct dimensions of parent—adolescent relationships. *International Journal of Behavioral Development, 35*, 271-281. doi:10.1177/0165025410385878

Kelly, G. A. (1955). *The psychology of personal constructs*. New York, NY: Norton.

Kernberg, O. F., & Caligor, E. (2005). A psychoanalytic theory of personality disorders. In M. F. Lenzenweger & J. F. Clarkin (Eds.), *Major theories of personality disorder* (2nd ed., pp. 114-156). New York, NY: The Guilford Press.

*Koydemir, S., Şimşek, Ö. F., & Demir, M. (2014). Pathways from personality to happiness: Sense of uniqueness as a mediator. *Journal of Humanistic Psychology, 54*, 314-335. doi:10.1177/0022167813501226

*Kunnen, E. (2010). Congruency between domains in commitment development. *Identity: An International Journal of Theory and Research, 10*, 254-269. doi:10.1080/15283488.2010.523321

Lapsley, D. K., FitzGerald, D. P., Rice, K. G., & Jackson, S. (1989). Separation-individuation and the "new look" at the imaginary audience and personal fable a test of an integrative model. *Journal of Adolescent Research, 4*, 483-505. doi:10.1177/074355488944006

Lichtwarck-Aschoff, A., van Geert, P., Bosma, H., & Kunnen, S. (2008). Time and identity: A framework for research and theory formation. *Developmental Review, 28*, 370-400. doi:10.1016/j.dr.2008.04.001

*Lo Coco, A., Ingoglia, S., & Lundqvist, L.-O. (2014). The assessment of susceptibility to emotional contagion: A contribution to the Italian adaptation of the Emotional Contagion Scale. *Journal of Nonverbal Behavior, 38*, 67-87. doi:10.1007/s10919-013-0166-9

*Lopez, F. G. (2001). Adult attachment orientations, self-other boundary regulation, and splitting tendencies in a college sample. *Journal of Counseling Psychology, 48*, 440-446. doi:10.1037/0022-0167.48.4.440

Luyckx, K., Goossens, L., & Soenens, B. (2006). A developmental contextual perspective on identity construction in emerging adulthood: Change dynamics in commitment formation and commitment evaluation. *Developmental Psychology, 42*, 366-380. doi:10.1037/0012-1649.42.2.366

*Luyckx, K., Klimstra, T. A., Duriez, B., Van Petegem, S., Beyers, W., Teppers, E., & Goossens, L. (2013a). Personal identity processes and self-esteem: Temporal sequences in high school and college students. *Journal of Research in Personality, 47*, 159-170. doi:10.1016/j.jrp.2012.10.005

*Luyckx, K., Klimstra, T. A., Schwartz, S. J., & Duriez, B. (2013b). Personal identity in college and the work context: Developmental trajectories and psychosocial functioning. *European Journal of Personality, 27*, 222-237. doi:10.1111/sode.12027

Marcia, J. E. (1966). Development and validation of ego-identity status. *Journal of Personality and Social Psychology, 3*, 551-558. doi:10.1037/h0023281

McLean, K. C., Syed, M., & Shucard, H. (2016). Bringing identity content to the fore: Links to identity development processes. *Emerging Adulthood, 4*, 356-364. doi:10.1177/2167696815626820

Meeus, W. (2011). The study of adolescent identity formation 2000–2010: A review of longitudinal research. *Journal of Research on Adolescence, 21*, 75-94. doi:10.1111/j.1532-7795.2010.00716.x

Meeus, W. (2018). The identity status continuum revisited: A comparison of longitudinal findings with Marcia's model and dual cycle models. . *European Psychologist, 23*, 289-299. doi:10.1027/1016-9040/a000339

*Meeus, W., Van de Schoot, R., Keijsers, L., & Branje, S. (2012). Identity statuses as developmental trajectories: A five-wave longitudinal study in early-to-middle and middle-to-late adolescents. *Journal of Youth Adolescence, 41*, 1008-1021. doi:10.1007/s10964-011-9730-y

Meeus, W., Van de Schoot, R., Keijsers, L., Schwartz, S. J., & Branje, S. (2010). On the progression and stability of adolescent identity formation: A five-wave longitudinal study in early-to-middle and middle-to-late adolescence. *Child Development, 81*, 1565-1581. doi:10.1111/j.1467-8624.2010.01492.x

*Mercer, N., Crocetti, E., Branje, S., Van Lier, P., & Meeus, W. (2017). Linking delinquency and personal identity formation across adolescence: Examining between-and within-person associations. *Developmental Psychology, 53*, 2182-2194. doi:10.1037/dev0000351

*Neff, K. D., & McGehee, P. (2010). Self-compassion and psychological resilience among adolescents and young adults. *Self and Identity, 9*, 225-240. doi:10.1080/15298860902979307

*Negru-Subtirica, O., Pop, E. I., & Crocetti, E. (2015). Developmental trajectories and reciprocal associations between career adaptability and vocational identity: A three-wave longitudinal study with adolescents. *Journal of Vocational Behavior, 88*, 131-142. doi:10.1016/j.jvb.2015.03.004

*Negru-Subtirica, O., Pop, E. I., Luyckx, K., Dezutter, J., & Steger, M. F. (2016). The meaningful identity: A longitudinal look at the interplay between identity and meaning in life in adolescence. *Developmental Psychology, 52*, 1926-1936. doi:10.1037/dev0000176

Olver, R. R., Aries, E., & Batgos, J. (1989). Self-other differentiation and the mother-child relationship: The effects of sex and birth order. *The Journal of Genetic Psychology, 150*, 311-322. doi:10.1080/00221325.1989.9914600

*Pasupathi, M. (2014). Identity development: Dialogue between normative and pathological developmental approaches. *Journal of Personality Disorders, 28*, 113-120. doi:10.1521/pedi.2014.28.1.113

Pasupathi, M., Mansour, E., & Brubaker, J. R. (2007). Developing a life story: Constructing relations between self and experience in autobiographical narratives. *Human Development, 50*, 85-110. doi:10.1159/000100939

Pilarska, A. (2014). Self-construal as a mediator between identity structure and subjective well-being. *Current Psychology, 33*, 130-154. doi:10.1007/s12144-013-9202-5

Pilarska, A., & Suchańska, A. (2015a). The identity processes and the sense of identity: Interrelations and significance to the capacity for closeness. *Studia Psychologiczne, 53*, 87-100. doi:10.2478/V1067-010-0142-3

Pilarska, A., & Suchańska, A. (2015b). Self-complexity and self-concept differentiation–What have we been measuring for the past 30 years? *Current Psychology, 34*, 723-743. doi:10.1007/s12144-014-9285-7

*Pop, E. I., Negru-Subtirica, O., Crocetti, E., Opre, A., & Meeus, W. (2016). On the interplay between academic achievement and educational identity: A longitudinal study. *Journal of Adolescence, 47*, 135-144. doi:10.1016/j.adolescence.2015.11.004

Rochat, P. (2003). Five levels of self-awareness as they unfold early in life. *Consciousness and cognition, 12*, 717-731. doi:10.1016/S1053-8100(03)00081-3

*Schwartz, S. J., Klimstra, T. A., Luyckx, K., Hale, W. W., Frijns, T., Oosterwegel, A., . . . Meeus, W. H. J. (2011). Daily dynamics of personal identity and self-concept clarity. *European Journal of Personality, 25*, 373-385. doi:10.1002/per.798

*Shadel, W. G., Niaura, R., & Abrams, D. B. (2004). Who Am I? The Role of Self-Conflict in Adolescents' Responses to Cigarette Advertising. *Journal of Behavioral Medicine, 27*, 463-475. doi:10.1023/B:JOBM.0000047610.07195.b0

*Shadel, W. G., Tharp-Taylor, S., & Fryer, C. S. (2008). Exposure to cigarette advertising and adolescents' intentions to smoke: The moderating role of the developing self-concept. *Journal of Pediatric Psychology, 33*, 751-760. doi:10.1093/jpepsy/jsn025

*Shadel, W. G., Tharp-Taylor, S., & Fryer, C. S. (2009). How does exposure to cigarette advertising contribute to smoking in adolescents? The role of the developing self-concept and identification with advertising models. *Addictive Behaviors, 34*, 932-937. doi:10.1016/j.addbeh.2009.05.014

*Shirai, T., Nakamura, T., & Katsuma, K. (2016). Identity development in relation to time beliefs in emerging adulthood: A long-term longitudinal study. *Identity: An International Journal of Theory and Research, 16*, 45-58. doi:10.1080/15283488.2015.1121817

*Şimşek, Ö. F., & Demir, M. (2013). Parental support for basic psychological needs and happiness: The importance of sense of uniqueness. *Social Indicators Research, 112*, 661-678. doi:10.1007/s11205-012-0075-z

*Şimşek, Ö. F., & Demir, M. (2014). A cross-cultural investigation into the relationships among parental support for basic psychological needs, sense of uniqueness, and happiness. *The Journal of Psychology Interdisciplinary and Applied, 148*, 387-411. doi:10.1080/00223980.2013.805115

*Şimşek, Ö. F., & Yalınçetin, B. (2010). I feel unique, therefore I am: The development and preliminary validation of the Personal Sense of Uniqueness (PSU) scale. *Personality and Individual Differences, 49*, 576-581. doi:10.1016/j.paid.2010.05.006

Snyder, C. R., & Fromkin, H. L. (1980). *Uniqueness: The human pursuit of difference*. New York, NY: Plenum Press.

Syed, M., & McLean, K. C. (2016). Understanding identity integration: Theoretical, methodological, and applied issues. *Journal of Adolescence, 47*, 109-118. doi:10.1016/j.adolescence.2015.09.005

*Van Doeselaar, L., Meeus, W., Koot, H. M., & Branje, S. (2016). The role of best friends in educational identity formation in adolescence. *Journal of Adolescence, 47*, 28-37. doi:10.1016/j.adolescence.2015.12.002

Van Hoof, A. (1999). The identity status field re-reviewed: An update of unresolved and neglected issues with a view on some alternative approaches. *Developmental Review, 19*, 497-556. doi:10.1006/drev.1999.0484

Van Hoof, A., & Raaijmakers, Q. A. W. (2002). The spatial integration of adolescent identity: Its relation to age, education, and subjective well-being. *Scandinavian Journal of Psychology, 43*, 201-212. doi:10.1111/1467-9450.00288

Van Hoof, A., & Raaijmakers, Q. A. W. (2003). The search for the structure of identity formation. *Identity: An International Journal of Theory and Research, 3*, 271-289. doi:10.1207/S1532706XID0303_06

Vignoles, V. L. (2011). Identity motives. In S. J. Schwartz, K. Luyckx, & V. L. Vignoles (Eds.), *Handbook of identity theory and research* (pp. 403-432). New York, NY: Springer.

Vignoles, V. L., Regalia, C., Manzi, C., Golledge, J., & Scabini, E. (2006). Beyond self-esteem: Influence of multiple motives on identity construction. *Journal of Personality and Social Psychology, 90*, 308-333. doi:10.1037/0022-3514.90.2.308

Waterman, A. S. (1982). Identity development from adolescence to adulthood: An extension of theory and a review of research. *Developmental Psychology, 18*, 341-358. doi:10.1037/0012-1649.18.3.341

Waterman, A. S. (1988). Identity status theory and Erikson's theory: Communalities and differences. *Developmental Review, 8*, 185-208. doi:10.1016/0273-2297(88)90003-2

CHAPTER 3 –

Distinctiveness as a Marker of Identity Formation

Van Doeselaar, L., Klimstra, T. A., Denissen, J. J. A., & Meeus, W. (2019). Distinctiveness as a marker of identity formation. *Journal of Research in Personality, 78,* 153-164. https://doi.org/10.1016/j.jrp.2018.12.002

ABSTRACT

Individual distinctiveness is theorized to characterize an adaptive identity, but its importance remained underexplored. In two studies, we investigated the nomological networks of two common conceptualizations of distinctiveness: general and comparative distinctiveness. We compared these to the network of identity formation's best-validated marker: commitment. Findings from two samples of young adults living in the Netherlands (n = 320) and in the US (n = 246) both revealed that general distinctiveness marked adaptive identity formation and greater psychosocial well-being. Moreover, general distinctiveness had unique predictive value over commitment strength. Comparative distinctiveness from important others uniquely indicated lowered social well-being. Our findings illustrate that careful attention should be paid to the conceptualization of distinctiveness, because distinctiveness is an important but complex concept.

INTRODUCTION

Individuals are thought to have a need for distinctiveness from others (Brewer, 1991; Snyder & Fromkin, 1980), which can be fulfilled through the construction of a clear personal identity (Vignoles, 2011). Therefore, a high level of distinctiveness is considered to be one of the features of an adaptive identity, alongside the experience of a high sense of continuity (Erikson, 1968; Pasupathi, 2014). A sense of continuity can be achieved by constructing strong commitments that provide certainty and direction in life (Crocetti, Rubini, & Meeus, 2008; Luyckx, Goossens, Soenens, & Beyers, 2006). However, whereas identity commitment has been thoroughly validated as a feature of adaptive identity development (for a review, see Meeus, 2011), distinctiveness' importance has remained more ambiguous.

Distinctiveness is a broad concept that can be constructed in multiple ways (Vignoles, Chryssochoou, & Breakwell, 2000). For instance, distinctiveness can be derived from individuals' separateness, referring to the psychological distance from others (e.g., physical and symbolic boundaries and feelings of independence, privacy, and isolation). Furthermore, distinctiveness can be derived from individuals' social position (e.g., their relationships, roles, or social status). Generally, however, the main source of distinctiveness is the experience of differences in personal characteristics (e.g., traits, abilities, and physical characteristics) between oneself and others (Becker et al., 2012). Therefore, the present research operationalized distinctiveness as the degree of perceived differences between oneself and others in personal characteristics. Yet, even when only focusing on this specific form of distinctiveness, conceptualizations differ across theories and studies (e.g., Kelly, 1955; Snyder & Fromkin, 1980). Moreover, although various theories state that experiencing distinctiveness is important for psychosocial well-being, it is such a complex construct that in certain forms it can also have drawbacks (Brewer, 1991; Snyder & Fromkin, 1980). So far, different conceptualizations of distinctiveness have only been studied separately, whereas directly comparing these different conceptualizations may facilitate a better understanding of distinctiveness and its adaptiveness. Moreover, to clarify the role of distinctiveness in the broader process of identity formation, it should be studied alongside the best-validated marker of identity formation: identity commitment.

In the present research, we therefore investigated the nomological networks of two conceptualizations of distinctiveness: general and comparative distinctiveness. We examined the associations of these conceptualizations with young adults' psychosocial well-being and compared this to identity commitments' associations with psychosocial well-being.

Development of Distinctiveness

Individuals' experience of distinctiveness unfolds in the first decades of life (for an overview see Harter, 2012). The awareness of the self, which can be seen as a rudimentary form of distinctiveness, emerges around 2 years of age, when children recognize themselves in a mirror. From middle childhood onwards, children start comparing themselves to others, mainly for personal competence assessments. During adolescence and young adulthood, these comparisons become more comprehensive. Consequently, young adults are generally able to compare themselves to others on many personal aspects. The adaptiveness of perceiving more distinctiveness may depend on its exact conceptualization.

Nomological Network of General Distinctiveness

One way of conceptualizing distinctiveness is by focusing on individuals' sense of general distinctiveness, referring to the degree to which individuals believe that they differ from others in general. According to uniqueness theory (Snyder & Fromkin, 1980) this is a common dimension on which people define themselves.

Erikson (1968) described a clear identity as "superordinated to any single identification with individuals of the past: it includes all significant identifications, but it also alters them in order to make a unique and reasonably coherent whole of them" (p. 161). Thus, a personal identity consists of characteristics that differentiate an individual from others, making general distinctiveness a feature of an adaptive identity (Pasupathi, 2014; Pilarska, 2014). Without any sense of distinctiveness from others, a personal identity might be very difficult if not impossible to construe (Codol, 1981; Vignoles et al., 2000). Because of this necessity for self-definition, general distinctiveness can be regarded as a human need (Brewer, 1991; Snyder & Fromkin, 1980).

Empirical research supports these theoretical notions, as previous findings showed that the characteristics that are perceived by individuals themselves as most distinct are often also deemed as most self-defining (Becker et al., 2012; Vignoles, Regalia, Manzi, Golledge, & Scabini, 2006). In addition, individuals who feel more generally distinct have been found to ruminate less about identity issues and have stronger identity commitments (Pilarska & Suchańska, 2015). Because identity formation is a key task for young people (Arnett, 2000; Erikson, 1968), features that indicate adaptive identity formation such as higher levels of general distinctiveness, should also indicate broader psychological well-being. Previous studies indeed supported this idea, as general distinctiveness was associated with higher self-esteem and life satisfaction (Pilarska, 2014; Şimşek & Yalınçetin, 2010).

Experiencing general distinctiveness should also predict higher social well-being. Personal identities are constructed within interpersonal contexts (Erikson,

1968) and higher quality relationships may therefore facilitate identity formation. In turn, having a clear identity might be beneficial for the development of personal relationships (Erikson, 1968). For example, individuals with a distinct identity might experience less fear to lose themselves within interpersonal relationships. Consistent with these ideas, previous findings showed that general distinctiveness was associated with stronger feelings of relatedness to others (Şimşek & Yalınçetin, 2010) and higher friendship quality (Demir, Şimşek, & Procsal, 2013).

Within the nomological network of general distinctiveness, the concept of narcissism is likely also important. Highly narcissistic individuals perceive themselves in grandiose terms (Back et al., 2013). Grandiosity partly overlaps with general distinctiveness, as it refers to perceiving the self as distinct in a positive way. To maintain a grandiose self, individuals can use two strategies: narcissistic admiration and rivalry (Back et al., 2013). Narcissistic admiration, which is largely adaptive (e.g., related to short-term romantic appeal; Wurst et al., 2017), refers to repeatedly trying to reinstate the grandiose self by pursuing others' admiration and feelings of distinctiveness. This strategy might thus be strongly related to general distinctiveness. Narcissistic rivalry refers to protecting the grandiose self, for example by devaluating others. This strategy is more maladaptive, as it is related to problems within close relationships (Back et al., 2013; Wurst et al., 2017). Possibly, narcissistic rivalry is also more common among individuals high on general distinctiveness. Because the strategies differ in adaptiveness, knowledge on their links with general distinctiveness provides insight in the adaptiveness of general distinctiveness.

Nomological Network of Comparative Distinctiveness

A second way of conceptualizing distinctiveness is by focusing on individuals' comparative distinctiveness. Studies using this approach focus on the extent to which individuals' self-perceptions deviate from their perceptions of specific others in their social contexts (e.g., Feixas, Erazo-Caicedo, Harter, & Bach, 2008; Selfhout, Denissen, Branje, & Meeus, 2009). Based on this pattern of perceived similarities and differences, a comparative distinctiveness score can be calculated.

The pattern of perceived similarities and distinctions likely (at least partly) informs individuals' sense of general distinctiveness (Snyder & Fromkin, 1980). Therefore, both conceptualizations are likely related to a certain extent. Yet, there are also crucial differences. One key difference is that comparative distinctiveness focuses on specific others, whereas for general distinctiveness the others are not specified. Often, in studies on comparative distinctiveness, the focus is on important others (De Bonis, De Boeck, Lida-Pulik, & Féline, 1995; Feixas et al., 2008; Selfhout et al., 2009). This might affect associations with psychosocial well-being. That is,

theories indicate that high comparative distinctiveness from important others is maladaptive. Optimal distinctiveness theory states that individuals have to find a balance between their need for distinctiveness and need for social inclusion (i.e., need for similarity and deindividuation; Brewer, 1991). Too high comparative distinctiveness from important others may reflect a lack of social inclusion, leading to feelings of social distance and isolation (Brewer, 1991). Furthermore, hypotheses on similarity and attraction in dyadic relationships predict that relationship satisfaction is positively related to perceived similarity between the self and other (Montoya, Horton, & Kirchner, 2008; Morry, 2005; Selfhout et al., 2009), because perceiving these similarities results in feelings of self-recognition and self-reassurance and in more pleasant interactions. Consistent with theories, previous research demonstrated that comparative distinctiveness was negatively linked to attraction in close dyadic relationships (Montoya et al., 2008; Morry, 2005; Selfhout et al., 2009).

In addition to social well-being, high comparative distinctiveness from important others might be related to more maladaptive identity formation and lowered psychological well-being. Lacking social inclusion and feelings of self-recognition might lead to discomfort with the self (Brewer, 1991; Morry, 2007). Therefore, young adults who perceive high comparative distinctiveness might feel more distressed regarding identity issues and search for ways to revise their identity. In addition, this discomfort with the self might result in a less positive view on the self and one's life. Previously, studies based on personal construct theory (Kelly, 1955) indicated that comparative distinctiveness from important others was higher in samples with various mental disorders (e.g., major depressive disorder, dysthymia, schizophrenia, and borderline personality disorder; De Bonis et al., 1995; Feixas et al., 2008).

In sum, theories and empirical findings suggest that, although distinctiveness is thought to be one of the features of an adaptive identity, it can in certain forms also have downsides. Comparative distinctiveness from important others is likely a feature of more maladaptive (identity) development.

Distinctiveness versus Commitment

General distinctiveness thus likely characterizes adaptive identity formation, whereas comparative distinctiveness from important others might indicate maladaptive identity formation. To further clarify the importance of distinctiveness within the broader process of identity formation, we compared the nomological networks of both conceptualizations to the nomological network of identification with commitment. Identity commitment is currently the best-validated marker of identity formation, represented in various influential models of identity formation

(Crocetti et al., 2008; Luyckx et al., 2006; Marcia, 1966). These models state that individuals make choices in several identity-relevant domains (e.g., romantic relationships and career). By integrating these commitments within their identity, these provide a sense of continuity (Crocetti et al., 2008; Luyckx et al., 2006). Obtaining a sense of continuity is especially important for young people, as they are expected to become increasingly independent with age and can no longer fully rely on childhood identifications (i.e., convictions directly adopted from their parents; Erikson, 1968). The construct identification with commitment captures individuals' certainty about identity choices and the integration of these choices within their identity (Luyckx et al., 2006).

Many previous studies have shown that identification with commitment is related to other indicators of identity formation, and social and psychological well-being. Young adults who identify more strongly with their commitments were found to experience less distress and rumination regarding identity issues (Luyckx et al., 2008; Sica, Sestito, & Ragozini, 2014). Moreover, they feel more strongly related to others and less lonely (Cicognani, Klimstra, & Goossens, 2014; Luyckx, Vansteenkiste, Goossens, & Duriez, 2009) and report higher self-esteem and life satisfaction (Luyckx et al., 2006; Schwartz et al., 2011). Consequently, identification with commitment is considered a validated marker of adaptive identity formation.

Adaptive identity formation can thus likely be conceptualized as a cluster of related features, such as a sense of general distinctiveness as well as strong commitments (Pasupathi, 2014; Van Doeselaar, Becht, Klimstra, & Meeus, 2018). To examine the role and importance of distinctiveness in the broader identity construct, we compared the nomological network of the two conceptualizations of distinctiveness to that of identification with commitment. We expected that the direction of general distinctiveness' associations with psychosocial well-being would be similar to those of identification with commitment. Moreover, we expected that comparative distinctiveness and identification with commitment would be differently associated with psychosocial well-being. In addition to comparing the associations between both distinctiveness conceptualizations and identification with commitment, we were interested in the incremental value of distinctiveness and commitment in predicting indicators of well-being. Comparing the different concepts on this provides valuable insights in the importance and added value of the distinctiveness conceptualizations and commitment.

The Present Research

In the present research, we studied the importance of two conceptualizations of distinctiveness – general and comparative distinctiveness – for psychosocial well-being, and for identity formation in particular. Our aim was to investigate the

nomological networks of both conceptualizations, and compare these to each other and to the nomological network of identification with commitment. Nomological networks were compared by testing differences in hypothesized associations and by exploring the uniqueness of predictions.

Because both distinctiveness conceptualizations reflect different aspects of the same construct, we expected them to be positively related. Yet, we expected that their nomological networks would differ. General distinctiveness, likely a feature of an adaptive identity, was expected to be negatively related to indicators of maladaptive identity formation, and positively related to indicators of psychological well-being, social well-being, and narcissistic strategies. Comparative distinctiveness from important others was expected to be indicative of a lack of social inclusion. Thus, we expected it to be negatively associated with indicators of social well-being. Additionally, we expected it to be negatively associated with psychological well-being and positively associated with maladaptive identity formation.

Identification with commitment was expected to be positively associated with general distinctiveness, but negatively associated with comparative distinctiveness from important others. Moreover, the nomological network of identification with commitment was expected to consist of associations that were in the same direction as those of general distinctiveness, but opposite to those of comparative distinctiveness from important others.

We examined these hypotheses in two studies with slightly different emphases. This allowed us to test whether findings could be replicated across two countries: the Netherlands and the United States (US). Moreover, Study 2 built on Study 1 by extending comparative distinctiveness' conceptualization to disliked others, in addition to important others.

STUDY 1

METHOD

Participants and Procedure

Psychology students of Tilburg University filled out an online survey in exchange for course credit. After reading information about the study, participants provided their consent and completed the survey. From those who finished the survey, 320 (81.8%) were included in the analyses. Excluded participants seemed to provide careless responses, as they replied wrongly to at least one of two attention check items (i.e., "Always reply to this item with true" and "Here you should always click on strongly disagree"; Meade & Craig, 2012). This high percentage of careless responses is not uncommon among university students

participating in studies for course credit (e.g., Donnellan, Lucas, & Cesario, 2015). The selected sample consisted for 70.3% of females (M_{age} = 20.11 years, *SD* = 1.89, Range = 17-28 years). Of these students, 60.9% were living at home with family and 96.9% identified themselves as (partially) Dutch. The local institutional review board of Tilburg University approved of this study (protocol number EC-2017.03).

Measures

Some measures (Personal Sense of Uniqueness scale, Identity Distress Survey, and Balanced Measure of Psychological Needs) were not yet available in Dutch and were translated from English following a procedure of translation and back-translation. The structure of these translated measures was tested by examining the inter-item correlations and with the use of confirmatory factor analyses (CFAs) in Mplus 7 (Muthén & Muthén, 1998-2015). Findings resembled those of the original validation studies and provided evidence for the Dutch measures being acceptable (i.e., positive inter-item correlations, overall sufficient factor loadings, and acceptable model fits). The Dutch measures, information on the translation procedure, inter-item correlations, and the results of the CFAs are available in the supplemental materials. Coefficient alphas of all used measures are shown in Table 3.1.

General distinctiveness. The Personal Sense of Uniqueness scale measured participants' sense of general distinctiveness (Şimşek & Yalınçetin, 2010). It contained 5 items (e.g., "I think that the characteristics that make me up are different from others"), mostly focused on differences between the self and others in personal characteristics. Items were answered on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The instruction stated that differences from others could be either positive, neutral, or negative. This instruction was added to increase the chance that participants would not only focus on positive differences and to decrease potential social desirability effects.

Comparative distinctiveness. Prior to completing the comparative distinctiveness measures, participants listed seven important others and indicated who these were: 25.0% were parents, 16.5% siblings, 8.3% other family members, 47.5% peers, and 2.8% others. Subsequently, they filled out two measures as input to compute comparative distinctiveness.

First, a modified version of Kelly's (1955) repertory grid was used. For each important other and themselves, participants wrote down one characteristic that described this person. In addition, participants provided an opposite characteristic of each of these eight characteristics. The advantage of this measure is that participants themselves report the characteristics, which increases the chance that these are personally meaningful. Next, a matrix was presented with a column for

each important other and the self and a row for each of the 16 self-generated characteristics (in a random order). Participants reported for each important other and the self whether every characteristic described this person or not (i.e., a dichotomous score). From these responses, we calculated the proportion of scores on which the self differed from the important others.

Second, participants rated themselves and the seven important others on the Big Five of personality: extraversion, agreeableness, conscientiousness, neuroticism, and openness. The Ten-Item Personality Inventory-revised (TIPI-r; Denissen, Geenen, Selfhout, & van Aken, 2007) measured each dimension with a single bipolar rating scale. In our computations of comparative distinctiveness, we controlled for the influence of normativeness. Controlling for normativeness is important, because having a more normative profile increases both the chance of having a profile that is more similar to others and the chance of having higher psychosocial well-being (Furr, 2008). Therefore, we first computed distinctive profiles by sample mean-centering the Big Five traits of participants and of important others (Furr, 2008; Rogers, Wood, & Furr, 2018). A distinctive profile showed how a person deviated from the normative profile. Next, we computed *q*-correlations between the distinctive profiles of participants and their important others. These correlations reflect distinctive similarity, which "captures the degree to which two profiles are similar in the ways they diverge from the average profile" (Rogers et al., 2018, p. 126). However, as we were interested in the opposite of similarity, we multiplied participants' average *q*-correlation between the self and all important others by minus one, so that higher scores reflected higher comparative distinctiveness.

Identification with commitment. Identification with commitment was assessed with a subscale of the Dimensions of Identity Development Scale (DIDS; Luyckx et al., 2008). This subscale consisted of 5 items (e.g., "I sense that the direction I want to take in my life will really suit me"). Items of the DIDS were rated on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Maladaptive identity formation. Rumination about identity choices was measured with the 5-item ruminative exploration subscale of the DIDS (e.g., "I keep looking for the direction I want to take in my life"). Recent identity distress was assessed with two subscales of the Identity Distress Survey (IDS; Berman, Montgomery, & Kurtines, 2004; Hernandez, Montgomery, & Kurtines, 2006). The Identity Issues Distress subscale consisted of worries regarding seven identity issues (e.g., long-term goals, friendships). The 2-item Global Identity Distress subscale assessed the extent to which the issues as a whole had resulted in discomfort and interference with everyday functioning. Items were rated on a 5-point scale ranging from 1 (*not at all*) to 5 (*very severely*).

Social well-being. Sense of relatedness to others was assessed with the 6-item relatedness subscale of the Balanced Measure of Psychological Needs (BMPN; Sheldon & Hilpert, 2012). Items (e.g., "I felt close and connected with other people who are important to me") were answered on a 5-point scale, ranging from 1 (no agreement) to 5 (much agreement). Additionally, we measured peer- and parent-related loneliness with two subscales of the Loneliness and Aloneness Scale for Children and Adolescents (LACA; Marcoen, Goossens, & Caes, 1987). To make this measure suitable for university students, items were slightly adjusted (e.g., 'university' replaced 'school'). Items referring to 'home' were excluded, because it could have been unclear for participants living independently to which home these items referred. Peer-related loneliness was assessed with 12 items (e.g., "I feel sad because I have no friends") and parent-related loneliness with 10 items (e.g., "I feel left out by my parents"), all rated on a 4-point scale ranging from 1 (often) to 4 (never).

Psychological well-being. The 10-item Rosenberg Self-Esteem scale (RSE; Rosenberg, 1965) assessed self-esteem. Items (e.g. "On the whole, I am satisfied with myself") were rated on a 4-point scale ranging from 1 (strongly disagree) to 4 (strongly agree). In addition, the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) assessed life satisfaction. The 5 items (e.g., "I feel that I'm a person of worth") were rated on a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Narcissistic strategies. The use of narcissistic strategies was measured with the Brief Narcissistic Admiration and Rivalry Questionnaire (NARQ; Back et al., 2013). It consisted of two 3-item subscales: narcissistic admiration (e.g., "I deserve to be seen as a great personality") and narcissistic rivalry (e.g., "Most people are somehow losers"). Items were rated on a 6-point scale ranging from 1 (*not agree at all*) to 6 (*agree completely*). Coefficient alpha of rivalry was somewhat low ($\alpha = .55$), likely because of the low number of items, but all items on rivalry were positively associated (*r*s = .15 to .36).

Strategy of Analysis

The nomological networks of general distinctiveness, comparative distinctiveness, and identification with commitment were examined using Pearson correlations. Next, we tested whether dependent correlations with similar outcomes differed significantly between the conceptualizations of distinctiveness and identification with commitment (e.g., the correlation between general distinctiveness and self-esteem, and the correlation between identification with commitment and self-esteem; Lee & Preacher, 2013, September; Steiger, 1980).

Lastly, the unique predictive value of the conceptualizations of distinctiveness and identification with commitment was examined with multiple regression analyses.

RESULTS AND DISCUSSION

Descriptive Analyses

Descriptive statistics of all study variables are shown in Table 3.1. The two measures of comparative distinctiveness were significantly positively correlated, but rather weakly, $r = .21$. The correlation was $r = .42$, $p < .001$ when the Big Five comparative distinctiveness score was not corrected for normativeness, however. This suggests that the repertory grid comparative distinctiveness score was confounded with the normativeness of the characteristics. Although the two comparative distinctiveness measures were conceptually similar, they were thus empirically different. Therefore, we did not collapse them into one broad comparative distinctiveness construct, but included them separately in our correlational analyses. In describing our results, we focus only on the results that replicated across both measures. Because only the Big Five comparative distinctiveness measure was corrected for normativeness, this measure can be interpreted more straightforwardly than the repertory grid measure. Therefore, we only included the Big Five comparative distinctiveness measure in the multiple regression analyses reported in this manuscript. Results of the multiple regression analyses including the repertory grid comparative distinctiveness are available in Table S3.9 of the supplemental materials.

Correlations

Correlations between the variables of interest are shown in Table 3.1. Unexpectedly, neither measure of comparative distinctiveness was significantly associated with general distinctiveness. Identification with commitment was significantly positively associated with general distinctiveness, but not associated with comparative distinctiveness.

General distinctiveness was negatively associated with global identity distress, but not with identity issues distress or ruminative exploration. Furthermore, young adults who felt more generally distinct reported higher social well-being. They scored higher on relatedness and lower on peer-related loneliness. Yet, general distinctiveness was not linked with parent-related loneliness. Moreover, feeling generally distinct was linked with higher self-esteem and life satisfaction. Lastly, young adults who felt generally more distinct reported higher levels of both narcissistic strategies. Except for parent-related loneliness and narcissistic rivalry, all of the associations of general distinctiveness differed from the associations of comparative distinctiveness.

Table 3.1 | Descriptive Statistics and Pearson Correlations Study 1

Variable	Descriptives					Correlations				Difference between correlations			
	α	Min	Max	*M*	*SD*	1a.	1b.	2.	3.	1a.	1b.	2.	3.
1. Comparative distinctiveness													
a. Repertory grid		0.02	0.57	0.26	0.11								
b. Big Five		-0.86	0.45	-0.14	0.22	.21***							
2. General distinctiveness	.68	2.00	5.00	3.45	0.55	-.05	.07						
3. Identification with commitment	.84	1.20	5.00	3.34	0.70	-.10	-.02	.21***					
Maladaptive identity formation													
4. Identity issues distress	.68	1.00	4.43	2.35	0.61	.15**	.09	-.08	-.40***	A	A	B	C
5. Global identity distress	.74	1.00	5.00	2.73	0.92	.07	.07	-.15**	-.28***	A	A	B	B
6. Ruminative exploration	.87	1.00	5.00	2.94	0.94	.12*	.13*	-.08	-.67***	A	A	B	C
Social well-being													
7. Relatedness	.65	1.67	5.00	3.64	0.65	-.28***	-.17**	.15**	.19***	A	A	B	B
8. Parent-related loneliness	.92	1.00	4.00	1.62	0.61	.23***	.07	-.07	-.12*	A	B	B, C	C
9. Peer-related loneliness	.90	1.00	3.92	1.84	0.61	.19***	.13*	-.16**	-.33***	A	A	B	C
Psychological well-being													
10. Self-esteem	.90	1.10	4.00	2.88	0.54	-.17**	-.08	.38***	.46***	A	A	B	B
11. Life satisfaction	.77	1.40	7.00	4.55	1.15	-.21***	-.08	.13*	.34***	A	A	B	C
Narcissistic strategies													
12. Narcissistic admiration	.82	1.00	6.00	2.64	1.03	-.04	.02	.46***	.23***	A	A	B	C
13. Narcissistic rivalry	.55	1.00	5.33	2.16	0.87	.22***	.12*	.16**	-.13*	A	A	A	B

Note. If letters differ between variables 1a to 3 in the columns of 'Difference between correlations', the correlations with the variable in that row differed significantly ($p < .05$). *$p < .05$. **$p < .01$. ***$p < .001$.

Comparative distinctiveness was most consistently associated with the indicators of social well-being. Young adults who scored higher on comparative distinctiveness from important others felt less related to others and more peer-related loneliness. Yet, comparative distinctiveness was not (consistently) associated with parent-related loneliness. Regarding the associations with the indicators of maladaptive identity formation, comparative distinctiveness was consistently positively associated with rumination about identity choices. However, it was not significantly associated with identity issues distress or global identity distress. Furthermore, comparative distinctiveness was not significantly associated with self-esteem or life satisfaction. Lastly, comparative distinctiveness was significantly and positively associated with narcissistic rivalry, but not with narcissistic admiration.

Associations with indicators of maladaptive identity formation, social well-being, and psychological well-being were similar for identification with commitment and general distinctiveness in terms of sign (positive or negative) and strength. If the associations differed in strength, identification with commitment was a stronger correlate than general distinctiveness. Furthermore, associations with the narcissistic strategies differed. Admiration was more strongly positively associated with general distinctiveness than with identification with commitment. Rivalry was positively associated with general distinctiveness, but negatively with identification with commitment. The associations of identification with commitment with the validation measures differed significantly from those for comparative distinctiveness, with both constructs showing associations in different directions.

Multiple Regression Analyses

With multiple regression analyses, we tested the incremental predictive value of general distinctiveness, comparative distinctiveness, and identification with commitment relative to each other. Standardized coefficients of these analyses are available in Table 3.2.

In a first set of models, each indicator of maladaptive identity formation, social well-being, psychological well-being, and the narcissistic strategies was predicted by two variables: general distinctiveness and comparative distinctiveness (i.e., based on the Big Five). The standardized coefficients resulting from these analyses were highly comparable with the corresponding Pearson correlations. Significantly correlated variables were also significant predictors in the multiple regression, and their standardized estimates changed at most with .01. Controlling for one conceptualization of distinctiveness had thus no substantial effect on the associations with the other conceptualization of distinctiveness.

Table 3.2 | Standardized Coefficients of the Multiple Regression Analyses Study 1 and 2

	Dependent variables											
	Identity issues distress				Global identity distress				Ruminative exploration			
	β Model 1		β Model 2		β Model 1		β Model 2		β Model 1		β Model 2	
Independent variables	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2
Comparative distinctiveness	.09	.03	.08	.02	.08	-.02	.07	-.04	.13*	-.04	.11**	-.07
General distinctiveness	-.09	-.14*	.00	-.06	-.16**	-.23***	-.10	-.10	-.09	-.23***	.06	-.01
Identification with commitment			-.39***	-.21**			-.26***	-.37***			-.68***	-.62***

	Relatedness				Parent-related loneliness				Peer-related loneliness			
	β Model 1		β Model 2		β Model 1		β Model 2		β Model 1		β Model 2	
	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2
Comparative distinctiveness	-.18**	-.17**	-.18**	-.16**	.07	.13*	.07	.13*	.14**	.04	.13*	.04
General distinctiveness	.16**	.25***	.13*	.17**	-.07	-.21***	-.05	-.17**	-.17**	-.23***	-.10	-.18**
Identification with commitment			.16**	.22***			-.10	-.10			-.31***	-.14*

	Self-esteem				Life satisfaction			
	β Model 1		β Model 2		β Model 1		β Model 2	
	S1	S2	S1	S2	S1	S2	S1	S2
Comparative distinctiveness	-.11*	.02	-.09	.04	-.09	-.07	-.08	-.05
General distinctiveness	.39***	.43***	.30***	.27***	.13*	.23***	.06	.08
Identification with commitment			.40***	.46***			.33***	.41***

	Narcissistic admiration				Narcissistic rivalry			
	β Model 1		β Model 2		β Model 1		β Model 2	
	S1	S2	S1	S2	S1	S2	S1	S2
Comparative distinctiveness	-.01	-.11	.00	-.09	.11*	-.04	.11*	-.04
General distinctiveness	.46***	.48***	.43***	.38***	.16**	-.04	.19***	-.02
Identification with commitment			.14*	.31***			-.17**	-.05

Note. Comparative distinctiveness = Comparative distinctiveness from important others, based on the Big Five; S1 = Study 1; S2 = Study 2.
*$p < .05$. **$p < .01$. ***$p < .001$.

In a second set of models, identification with commitment was added as a predictor. In these models, general distinctiveness had incremental value over identification with commitment in predicting relatedness, self-esteem, and the narcissistic strategies. Yet, several of the associations of general distinctiveness that were significant in the previous models weakened, $|\Delta|\beta s \leq .09$, and became non-significant after including identification with commitment. Specifically, general distinctiveness was no longer significantly related to global identity distress, peer-related loneliness, and life satisfaction.

Including identification with commitment as a predictor had no substantial effect on the significant associations of comparative distinctiveness. It did not substantially reduce the significant associations of comparative distinctiveness with ruminative exploration, relatedness, peer-related loneliness, and narcissistic rivalry, $|\Delta|\beta s \leq .02$.

When controlling for general and comparative distinctiveness, identification with commitment was still significantly related to all variables it was initially associated with. Only the association with parent-related loneliness became non-significant. In general, identification with commitment thus showed to have unique predictive value in the concurrent prediction of almost all indicators.

Summary and Discussion of Findings

The findings indicated that general and comparative distinctiveness were empirically different. The two conceptualizations were unrelated and had significantly different nomological networks. Higher general distinctiveness was linked with slightly less identity distress, higher social and psychological well-being, and the use of narcissistic strategies. In contrast, higher comparative distinctiveness primarily indicated slightly lowered social well-being, as well as somewhat less rumination about identity issues. General distinctiveness' nomological network showed to be quite similar to that of identification with commitment, yet general distinctiveness had some incremental predictive value over identification with commitment. The associations of comparative distinctiveness with social well-being were not explained by general distinctiveness or identification with commitment.

That comparative distinctiveness from important others and general distinctiveness were unrelated and had different nomological networks might have partly been caused by the focus on important versus general others. In Study 1, the conceptualization of comparative distinctiveness was limited to important others, in line with previous studies (De Bonis et al., 1995; Feixas et al., 2008; Selfhout et al., 2009). Changing this focus to others to whom one is not closely related could provide insights in how general distinctiveness is constructed and change

comparative distinctiveness' nomological network substantially. This was undertaken in Study 2.

STUDY 2

In Study 2, we examined whether we could replicate the pattern of findings found in Study 1's Dutch young adult sample within a young adult US sample. Prior to data collection, we pre-registered the plan for this study (https://osf.io/md23k/). In addition to replicating the findings in another country, Study 2 extended Study 1. Possibly, individuals mostly focus on distinctions between themselves and unrelated others as input for their general sense of distinctiveness (Snyder & Fromkin, 1980). Based on optimal distinctiveness theory, it can be expected that perceiving similarities between the self and close others satisfies individuals' need for social inclusion, whereas perceiving differences between the self and unrelated others satisfies the need for distinctiveness (Brewer, 1991). Accordingly, individuals perceive themselves in general as more similar to liked others and more distinct from disliked others (Davis, 2017; Weller & Watson, 2009). Consequently, we tested in Study 2 whether comparative distinctiveness from disliked others was positively related to general distinctiveness, and whether these two conceptualizations of distinctiveness had a similar nomological network.

METHOD

Participants and Procedure

Data for Study 2 were collected via crowdsourcing platform Prolific (https://prolific.ac/). The sample consisted of college students aged 18 to 23 years, living in the US. After reading information about the study, participants provided their consent and completed the online survey. For 5.6% of the participants, the survey stopped halfway because they failed the attention check item (i.e., "Here you should always click on strongly disagree"; Meade & Craig, 2012). Completing the full survey was rewarded with £2.10 (i.e., $2.84). Most participants (about 90%) finished within 30 minutes. Of the 250 participants, those who did not mention seven important others (n = 2) or four disliked others (n = 2) were excluded. The selected sample of 246 students consisted of 39.8% females, 58.1% males, and 2.0% reported to be non-binary. Their average age was 20.91 years (SD = 1.63, Range = 18-24 years). Of the participants 12.6% were freshmen, 30.5% sophomores, 24.0% juniors, 24.4% seniors, and 7.7% graduate students. Furthermore, 59.3% of the participants indicated that they lived with parent(s)/family, while 40.7% indicated living outside the parental home. Participants identified themselves mostly as fully or partially White/European American (65.9%), Asian or Asian American (21.5%), Latinx or Hispanic (9.3%), or Black, African American, or African (9.3%) descent.

The local institutional review board of Tilburg University approved of this study (protocol number EC-2017.03a2).

Measures

Most measures were English language versions of those used in Study 1. An exception to this was that instead of the 6-item version we used the full 18-item version of the NARQ (Back et al., 2013). In addition, based on participant comments in Study 1, we stated for the LACA parent-related loneliness subscale (Marcoen et al., 1987) that participants could report, if necessary, on the one parent they had most contact with or a person that came closest to fulfilling the parental role. Moreover, we clarified that questions about home referred to the parental home. Coefficient alphas of all measures are reported in Table 3.3.

Another difference with Study 1 was that in Study 2 we only focused on the Big Five for comparative distinctiveness and that we extended this measure. Like in Study 1, participants listed seven important others and reported who these others were: 14.6% were parents, 12.6% siblings, 4.9% other family members, 65.4% peers, and 2.4% others. Additionally, participants listed four disliked others. To help participants come up with individuals they disliked, four descriptions based on Kelly's (1955) role titles were provided: a boy and a girl that participants did not like when they were in high school (or when they were about 16 years old), and a male and female whom they would dislike having as a companion on a trip. Across all listed disliked others, 57.2% were former classmates, 37.4% other peers, 4.2% family members, and 1.2% others. The procedure to compute comparative distinctiveness scores was equal to the procedure in Study 1. To control for normative profiles, we separately centered the Big Five traits of participants, important others, and disliked others prior to compute *q*-correlations (Rogers et al., 2018).

Strategy of Analysis

First, we replicated the analyses we performed in Study 1. Second, we performed multiple regression analyses in which comparative distinctiveness from disliked others predicted the same dependent variables as those included in Study 1, together with one of the other conceptualizations of distinctiveness or with identification with commitment.

RESULTS AND DISCUSSION

Descriptive Analyses

Table 3.3 shows the descriptive statistics of all study variables. Individuals perceived themselves on average as more distinct from disliked others than from important others, $t(245) = 5.05$, $p < .001$.

Correlations

Correlations between all variables of interest are shown in Table 3.3 and resembled those found in Study 1. For general distinctiveness there were a few exceptions to this. Specifically, in Study 2, general distinctiveness was significantly associated with all maladaptive identity formation and social well-being indicators and not with only one out of three or two out of three indicators, respectively. Moreover, unlike in Study 1, there was no significant association with narcissistic rivalry. Similar to Study 1, almost all associations of general distinctiveness differed significantly from those of comparative distinctiveness from important others. Findings for comparative distinctiveness from important others also resembled Study 1's findings. However, this time, it was significantly positively associated with parent-related loneliness instead of peer-related loneliness, and not significantly associated with ruminative exploration or narcissistic rivalry.

All associations of general distinctiveness and identification commitment were in the same direction. Similar to Study 1, about half of these associations did not differ significantly in strength. Although identification with commitment was more strongly associated with two indicators of maladaptive identity formation and with the indicators of psychological well-being, its associations with the indicators of social well-being and with identity issues distress did not differ significantly from general distinctiveness. Like in Study 1, comparative distinctiveness from important others' associations with social well-being differed significantly from those of identification with commitment.

Unexpectedly, comparative distinctiveness from disliked others was not significantly associated with general distinctiveness. Moreover, it was not significantly associated with comparative distinctiveness from important others, identification with commitment, or any of the other study measures.

Multiple Regression Analyses

Standardized coefficients of the multiple regression analyses are available in Table 3.2. Results of the analyses with comparative distinctiveness from important others and general distinctiveness as predictors showed that controlling for either distinctiveness conceptualization had no substantial effect on the associations of the

Table 3.3 | Descriptive Statistics and Pearson Correlations Study 2

Variable	Descriptives					Correlations				Difference between correlations			
	α	Min	Max	*M*	*SD*	1a.	1b.	2.	3.	1a.	1b.	2.	3.
1. Comparative distinctiveness													
a. Disliked others		-0.89	0.75	0.05	0.30								
b. Important others		-0.83	0.51	-0.07	0.24	.06							
2. General distinctiveness	.69	1.60	5.00	3.62	0.61	-.05	.04						
3. Identification with commitment	.88	1.00	5.00	3.22	0.88	.03	-.04	.35***					
Maladaptive identity formation													
4. Identity issues distress	.68	1.00	5.00	2.29	0.65	.01	.02	-.13*	-.24***	A	A	A, B	B
5. Global identity distress	.79	1.00	5.00	2.84	1.05	.06	-.03	-.23***	-.40***	A	A	B	C
6. Ruminative exploration	.86	1.00	5.00	3.60	0.95	-.03	-.05	-.23***	-.62***	A	A	B	C
Social well-being													
7. Relatedness	.57	1.33	5.00	3.25	0.66	.07	-.16*	.24***	.29***	A	B	A, C	C
8. Parent-related loneliness	.93	1.00	4.00	2.08	0.72	.00	.13*	-.20**	-.17**	A, C	A	B	B, C
9. Peer-related loneliness	.90	1.00	4.00	2.43	0.69	.03	.04	-.23***	-.20**	A	A	B	B
Psychological well-being													
10. Self-esteem	.91	1.00	4.00	2.60	0.60	-.07	.03	.43***	.55***	A	A	B	C
11. Life satisfaction	.88	1.00	6.80	3.73	1.47	-.01	-.07	.23***	.44***	A	A	B	C
Narcissistic strategies [a]													
12. Narcissistic admiration	.82	1.00	5.44	3.07	0.83	.04	-.09	.48***	.45***	A	A	B	B
13. Narcissistic rivalry	.81	1.00	5.44	2.37	0.85	.05	-.04	-.04	-.06	A	A	A	A

Note. If letters differ between variables 1a to 3 in the columns of 'Difference between correlations', the correlations with the variable in that row differed significantly ($p < .05$).
[a] Based on the brief NARQ (like used in Study 1) the correlations with comparative distinctiveness (disliked others), comparative distinctiveness (important others), general distinctiveness, and identification with commitment would be .07, -.16*, .35***and .36*** for admiration, and .04, -.05, -.01, and -.03 for rivalry, respectively.
*$p < .05$. **$p < .01$. ***$p < .001$.

other distinctiveness conceptualization. Significant associations remained significant and their standardized estimates changed at most with .01. This replicated the findings of Study 1.

When identification with commitment was added as predictor, general distinctiveness' associations with the maladaptive identity formation indicators and life satisfaction weakened, $|\Delta|\beta s \leq .22$, and became non-significant. However, like in Study 1, general distinctiveness still predicted relatedness, self-esteem, and narcissistic admiration. Moreover, general distinctiveness had incremental value in the prediction of peer- and parent-related loneliness. Resembling Study 1's findings, including identification with commitment as predictor did not substantially reduce the significant associations of comparative distinctiveness from important others with relatedness and parent-related loneliness, $\Delta\beta s \leq .01$. When controlling for general and comparative distinctiveness, only one association of identification with commitment became non-significant. Like in Study 1, identification with commitment was no longer significantly related to parent-related loneliness.

Moreover, a series of multiple regression analyses showed that controlling for comparative distinctiveness from disliked others did not substantially change any of the standardized estimates for comparative distinctiveness from important others, general distinctiveness, and identification with commitment ($|\Delta| \leq .01$), as estimated in the correlations. For this reason, comparative distinctiveness from disliked others was not taken into account any further in the multiple regression analyses.

Summary of Findings

Generally, findings of Study 2 replicated Study 1's pattern of findings.[3] Like in Study 1, general distinctiveness and comparative distinctiveness from important others were unrelated. General distinctiveness was consistently associated with less maladaptive identity formation, greater social and psychological well-being, and narcissistic admiration. About half of the time, these small to moderate associations were as strong as the associations of identification with commitment. Moreover, general distinctiveness had incremental value over identification with commitment in predicting social well-being, self-esteem, and narcissistic admiration. Like in Study 1, comparative distinctiveness from important others had modest but unique predictive value in predicting young adults' social well-being. Study 2's findings furthermore showed that comparative distinctiveness from disliked others was not associated with general distinctiveness or psychosocial well-being.

[3] Findings of Study 1 and Study 2 were also meta-analytically aggregated (Lipsey & Wilson, 2001). Results of the meta-analytic aggregation were largely identical to the findings in Study 1 and Study 2 separately, and are displayed in Table S3.11 and Table S3.12 in the supplemental materials.

GENERAL DISCUSSION

In two studies, we showed that general and comparative distinctiveness are two very different sides of the same coin. The two conceptualizations of distinctiveness were unrelated and had significantly different nomological networks and unique predictive properties.[4] Higher general distinctiveness was associated with slightly more adaptive identity formation and higher social and psychological well-being. Moreover, although commitment strength appeared to be the strongest marker of adaptive identity formation, our findings also revealed that general distinctiveness had incremental value in predicting young adults' concurrent adjustment. For comparative distinctiveness, it was crucial to take into account on which others this construct focused. Our findings did not show any predictive value for comparative distinctiveness from disliked others, but perceiving comparative distinctiveness from important others was a unique marker of slightly lowered social well-being.

Two Conceptualizations of Distinctiveness

That young adults' sense of general distinctiveness was unrelated to their comparative distinctiveness was unexpected, because perceived differences between the self and others have been thought to stimulate individuals' sense of general distinctiveness (Snyder & Fromkin, 1980). Key differences between these two conceptualizations that could explain this incongruence are the focus on specific others and specific characteristics for comparative distinctiveness, whereas the constituting factors are more abstract for general distinctiveness.

Our findings do eliminate two potential explanations for the incongruence between general and comparative distinctiveness. First, Study 2 showed that comparative distinctiveness from important and disliked others were both unrelated to general distinctiveness. This suggests that the focus on specific versus general others might not be the primary cause for the incongruence. Second, in Study 1's comparative distinctiveness measure that was based on Kelly's (1955) repertory grid, participants used their own personally relevant characteristics to describe themselves and others. Although for the comparative Big Five measures one could wonder whether these accurately capture the characteristics on which participants base their sense of general distinctiveness, this is less of a question for the repertory grid measure. Yet, even when focusing on personally relevant characteristics, comparative distinctiveness was unrelated to general

[4] Findings of analyses on curvilinear associations of distinctiveness with psychosocial well-being are discussed in the supplemental materials and displayed in Table S3.10 and Figures S3.1 to S3.7. These were added as exploratory analyses and were not included in our pre-registration of Study 2.

distinctiveness. Thus, focusing on pre-specified characteristics for comparative distinctiveness does not seem to be causing the incongruence with general distinctiveness.

A remaining possible reason for incongruence between the two conceptualizations is the way that comparative distinctiveness characteristics are aggregated into one score. For instance, individuals might perceive themselves as extremely open and therefore very distinct, although the other four Big Five traits are highly similar to others. Because of this, it might be hard if not impossible to trace individuals' sense of general distinctiveness back to their perceptions of themselves and others using generalized measures. Future studies might tap into this by asking participants to rate the relative importance of the distinctiveness dimensions, and using these ratings as weights before computing an overall comparative distinctiveness index. Alternatively, qualitative measures might be useful to get insight into how participants translate perceived comparative distinctiveness into global impressions of general distinctiveness. For example, individuals scoring high and low on general distinctiveness might be asked to elaborate on differences and similarities with various categories of other individuals, in terms of various psychological dimensions.

General distinctiveness. Distinctiveness has been stated to be a feature of an adaptive identity (Erikson, 1968; Pasupathi, 2014). Our research confirmed this assertion, as young adults who felt more generally distinct experienced slightly less problems in identity formation and had stronger commitments, thereby replicating previous findings obtained in a heterogeneous (in terms of education and backgrounds) sample of Polish young adults (Pilarska & Suchańska, 2015). Together, these findings indicate that general distinctiveness is a marker of more adaptive identity formation in young adulthood.

Because identity formation is a key developmental task in young adulthood (Arnett, 2000; Erikson, 1968), general distinctiveness was also expected to be an indicator of broader well-being among young adults. Our findings confirmed that young adults who felt more generally distinct experienced higher psychosocial well-being. They felt more related to others, less lonely, had higher self-esteem, and higher life satisfaction. This further suggests that feeling generally distinct is important for young adults in Western societies.

In addition, general distinctiveness' nomological network was expected to include the use of narcissistic strategies. Our findings showed that general distinctiveness was positively associated with narcissistic admiration. Yet, the association with rivalry was generally non-significant. Previous studies showed that the use of narcissistic admiration predicts more beneficial outcomes, whereas narcissistic rivalry is predictive of more maladaptive outcomes (Back et al., 2013;

Wurst et al., 2017). Hence, these findings provide additional evidence that general distinctiveness is an adaptive conceptualization of distinctiveness.

Comparative distinctiveness. As expected, based on the optimal distinctiveness theory (Brewer, 1991) and hypotheses on similarity and attraction (Morry, 2005), our findings showed consistently that young adults with high levels of comparative distinctiveness from important others experienced lowered social well-being. They felt less related to others and lonelier. These findings correspond with and extend previous findings that demonstrated negative associations between comparative distinctiveness and attraction in close dyadic relationships (Montoya et al., 2008; Morry, 2005; Selfhout et al., 2009).

Furthermore, we had expected that high comparative distinctiveness from important others would be related to discomfort with the self, and thus with maladaptive identity processes and lower psychological well-being. Our findings did not show much support for these hypotheses. High levels of comparative distinctiveness from important others were primarily indicative of lowered social well-being and this did not seem to spillover to other domains of adjustment. This latter finding does not seem to correspond with previous studies based on Kelly's (1955) repertory grid technique, which found that comparative distinctiveness from primarily important others was higher in samples suffering from various psychological disorders (De Bonis et al., 1995; Feixas et al., 2008). Yet, our findings also showed that when comparative distinctiveness from important others was derived from self-formulated traits (i.e., based on the repertory grid), it more often resulted in significantly negative correlations with well-being than when it was based on the Big Five and controlled for normative profiles. Normativeness refers to the extent to which characteristics are common in the population, and is related to psychosocial well-being (Furr, 2008; Wood & Furr, 2016). In our first study, the link between repertory grid and Big Five comparative distinctiveness weakened substantially when the latter was corrected for normative profiles. Findings based on the repertory grid are thus likely confounded by normativeness of traits. Hence, although the personal relevance of self-formulated traits might partially drive the stronger associations between repertory grid measures of comparative distinctiveness and well-being, the main driver behind these associations likely is the normativeness of the traits.

Extending the conceptualization of comparative distinctiveness to disliked others showed that on average individuals perceived themselves as more distinct from disliked others compared to important others (see also Davis, 2017; Weller & Watson, 2009). Still, comparative distinctiveness from disliked others was not related to any indicator of social or psychological well-being, identity formation, or the narcissistic strategies. Like the absence of a link between comparative and

general distinctiveness, this finding suggests that the need for distinctiveness is fulfilled by a more abstract experience of differences from others.

The current findings confirm that distinctiveness is not a uniform concept. While it was a sign of positive adjustment to experience high levels of one conceptualization of distinctiveness, experiencing high levels of another conceptualization marked negative adjustment. These findings highlight the importance of being explicit about the precise conceptualization of distinctiveness in future studies.

Distinctiveness versus Commitment

In addition to distinctiveness, an adaptive identity is thought to be characterized by strong identity commitments that provide young adults a sense of continuity (Erikson, 1968; Marcia, 1966; Pasupathi, 2014). To get more insight in the importance of distinctiveness for identity formation, we compared the nomological networks of both conceptualizations of distinctiveness with the network of identification with commitment. Our findings revealed that comparative distinctiveness' associations with young adults' psychosocial well-being were unique, whereas those of general distinctiveness and identification with commitment partly overlapped. This shows that comparative distinctiveness from important others has incremental value in signaling young adults' social well-being. Moreover, that general distinctiveness' predictions partly overlapped with those of a well-validated marker of identity formation further supports that general distinctiveness is part of a broader overall cluster of adaptive identity features.

Further comparisons showed that young adults' commitment was overall a stronger marker of an adaptive identity than general distinctiveness. Yet, our findings also showed that compared to commitment, general distinctiveness was in quite some cases an equally strong marker and for some aspects – social well-being and self-esteem – even had incremental predictive value. Our findings validate the strong focus on commitments in studies on identity formation (see Meeus, 2011; Van Doeselaar et al., 2018), but also indicate that an adaptive identity not only consists of strong commitments. So far, studies focusing on different adaptive identity features have been rare (see Van Doeselaar et al., 2018), and our findings show that researchers and practitioners should consider multiple relevant identity features.

Strengths, Limitations, and Future Directions

Important strengths of the present research were that we examined our hypotheses in two studies with adequate sample sizes to detect even small

associations.[5] Moreover, these studies focused on young adults from two different continents. The same pattern of findings was found across studies, demonstrating the robustness of our findings. Future studies could examine whether our findings can be generalized to samples from non-Western cultures. Experiencing differences between oneself and others has previously been found to be a more important source of distinctiveness in more individualistic cultures (Becker et al., 2012). Consequently, the nomological networks of general and comparative distinctiveness could be somewhat different in more collectivistic cultures.

Other strengths of our studies were the various measures that were included. Besides assessing individuals' distinctiveness with a self-report questionnaire, we also assessed distinctiveness more indirectly. Specifically, we asked participants to rate themselves and others on various characteristics and calculated the degree of distinctiveness based on these ratings. Our results illustrated that this provides two different perspectives. Furthermore, comparative distinctiveness was measured in multiple ways, varying in the characteristics and the others that participants focused on. Additionally, our studies included multiple indicators of various constructs, all hypothesized to be related to distinctiveness. That associations were generally found across multiple indicators of a construct further confirms the robustness of these findings. Moreover, by including a broad range of constructs, our studies provide a good overview of the nomological networks of conceptualizations of distinctiveness.

Nevertheless, the present research also has limitations that need to be acknowledged. First, although we brought two key conceptualizations of distinctiveness together, more conceptualizations exist. Both conceptualizations of distinctiveness in the present research focused on perceived differences from others as this was previously shown to be the key source of distinctiveness (Becker et al., 2012). However, distinctiveness can also be achieved by focusing on one's sense of separateness from others or one's social position (Vignoles et al., 2000). Moreover, fundamental for individual distinctiveness in general is a basic awareness and recognition of the self (Codol, 1981; Vignoles et al., 2000). Generally, this awareness develops early in life (see Harter, 2012), but when detrimentally affected, a lack of this rudimentary form of distinctiveness is thought to result in psychotic symptoms (Kernberg & Caligor, 2005). Our findings on two conceptualizations of distinctiveness already showed that the unitary label of 'distinctiveness' masks the existence of separate concepts. To get a better understanding of distinctiveness,

[5] The sample of 320 participants in Study 1 provided sufficient power, .80, to detect correlations of .16 and stronger, and the sample of 246 participants in Study 2 to detect correlations of .18 and stronger (α = .05, two-tailed; Faul, Erdfelder, Lang, & Buchner, 2007).

future studies might examine similarities and differences between the nomological networks of even more conceptualizations.

Second, our operationalizations of general and comparative distinctiveness both focused predominantly on individual differences in traits. An advantage of this approach was that it allowed us to control for profile normativeness when computing comparative distinctiveness based on the Big Five traits. Moreover, by using an operationalization of general distinctiveness that seems to also focus mostly on traits, our comparative and general distinctiveness measures became more comparable. Nevertheless, distinctiveness can also be based on other differences between individuals than traits. For instance, individuals could perceive differences in abilities and physical characteristics (Vignoles et al., 2000). Future research could examine if the current findings are replicable when broader operationalizations of individual differences are used.

Third, our findings are based on cross-sectional data and provide no empirical evidence for causality. Future longitudinal studies could investigate directionality and examine whether distinctiveness contributes to individuals' adjustment and/or vice versa.

Fourth, the present research was limited to young adulthood and findings might be different in other age groups. General distinctiveness has been suggested to form the foundation for identity formation (Pasupathi, 2014), which has been theorized to start in adolescence (Erikson, 1968). Adolescents generally struggle to achieve a sense of autonomy and individuality (Koepke & Denissen, 2012), which could strengthen their need for distinctiveness. Future studies should examine the nomological networks of distinctiveness at different periods across the life span.

CONCLUSION

The present findings demonstrate that distinctiveness is not a uniform construct. It can be conceptualized in multiple, unrelated, ways, which uniquely predict young adults' well-being. Perceiving many distinctions between the self and important others was linked to lowered social well-being among young adults. Nevertheless, feeling generally more distinct was a feature of a more adaptive identity and was linked with greater psychosocial well-being. Paying careful attention to the precise conceptualization of distinctiveness is essential, because distinctiveness is an important but complex concept.

OPEN PRACTICES

A time-stamped preregistration of the hypotheses, sampling plan, and analysis plan for Study 2 is available on the Open Sience Framework (OSF; https://osf.io/md23k/). Study 1 was not preregistered. Data of Study 1 and Study 2 are also available on the OSF: https://osf.io/b7qpu/. Materials are available via the supplemental materials or via the manuscripts on the construction of these measures.

SUPPLEMENTAL MATERIALS

Translation of Measures

The Personal Sense of Uniqueness scale, the Identity Distress Survey, and the Relatedness subscale of the Balanced Measure of Psychological Needs were translated from English to Dutch. The first author and undergraduates, native in Dutch and fluent in English, translated and back translated these items. First, two undergraduates translated items from Dutch to English. Together with the first author these undergraduates combined these translations into one Dutch version, which was subsequently translated back to English by two other undergraduates not familiar with the original English version. Based on discrepancies between the back-translation and the original items, the translated items were revised by these undergraduates and the first author and the final Dutch items were established. Subsequently, the internal consistency of these scales was assessed.

Personal Sense of Uniqueness scale

The Personal Sense of Uniqueness scale was originally developed by Şimşek and Yalınçetin (2010). Table S3.1 shows the Dutch Personal Sense of Uniqueness scale and the descriptive statistics per item. All items correlated significantly and positively with each other, as shown in Table S3.2. A confirmatory factor analysis in Mplus 7 (Muthén & Muthén, 1998-2015) showed that a one-factor model fitted the data well, $\chi^2(5) = 15.22$, $p = .010$, Comparative Fit Index (CFI) = .96, Root Mean Square Error of Approximation (RMSEA) = .08, 90% CI (confidence interval) of RMSEA [.036, .127].[6] In addition, all items had sufficient factor loadings (see Table S3.2).

[6] CFI values above 0.90 indicated acceptable fit and values above 0.95 indicated good model fit; RMSEA values below 0.08 represented acceptable model fit and values below 0.05 represented good fit (Byrne, 2013).

Table S3.1 | Dutch Personal Sense of Uniqueness Scale and Descriptive Statistics

Items	*M*	*SD*	Min	Max
1. Naarmate mensen me beter leren kennen, gaan ze mijn speciale eigenschappen zien	3.98	0.61	1	5
2. Ik voel me uniek	3.62	0.84	1	5
3. Ik kan niet veel bijzondere kenmerken bedenken die mij van anderen onderscheiden (*Reversed item*)	3.38	0.88	1	5
4. Ik denk dat mijn eigenschappen verschillen van die van anderen	3.58	0.77	1	5
5. Ik heb het gevoel dat sommige van mijn kenmerken compleet uniek zijn	2.70	1.01	1	5

Note. Instruction: De volgende uitspraken gaan over de mate waarin jij verschillen ziet tussen jouzelf en anderen. Het is niet van belang of deze verschillen goede of slechte aspecten van jou aanduiden. Speciaal en uniek kunnen zowel positief, neutraal als negatief zijn. Geef aan in welke mate je het met elke uitspraak eens of oneens bent door een bolletje aan te klikken. Answer categories: (1) Sterk mee oneens, (2) Mee oneens, (3) Neutraal, (4) Mee eens, (5) Sterk mee eens.

Table S3.2 | Inter-item Correlations and Factor Loadings for Personal Sense of Uniqueness Scale

	Inter-item correlations				Factor loadings
	Item 1	Item 2	Item 3	Item 4	Model 1
Item 1					.35
Item 2	.28***				.76
Item 3	.19***	.55***			.70
Item 4	.18**	.37***	.39***		.52
Item 5	.29***	.31***	.25***	.24***	.42

**$p < .01$. ***$p < .001$.

Identity Distress Survey

The Identity Distress Survey was originally developed by Berman et al. (2004). Table S3.3 shows the Dutch Identity Distress Survey and the descriptive statistics per item. Table S3.4 shows the inter-item correlations, which were all positive and almost all significant. Model fits and standardized parameter estimates of the confirmatory factor analyses are shown in Table S3.5 and S3.6 respectively.

In previous studies two subscales were computed (Berman et al., 2004; Hernandez et al., 2006). The Identity Issues Distress subscale consisted of items 1 to 7 and the Global Identity Distress subscale consisted of items 8 and 9. This division between subscales is based on the content of the items; Items 1 to 7 focus on specific issues, whereas items 8 and 9 focus on general identity distress. The model fit of a two-factor model (i.e., Model 2) did not fit significantly better than a one-factor model (i.e., Model 1), $\Delta\chi^2(1) = 0.34$, $p = .560$, ΔCFI = -.001, ΔRMSEA = .002.[7] However, based on the difference in content of items 1 to 7 and items 8 and 9 and the approach of previous studies, we decided to use the two subscales. The model with two factors did not show a sufficient fit to the data. Yet, the model fit became fairly good after adding two correlations between the errors of items 1 and 2 and items 3 and 7. That these items correlated relatively strongly with each other is not surprising as these identity issues overlap. Long-term goals include career choices. Being loyal to certain groups might overlap with being loyal to your friends.

The factor loadings of this final model (i.e., Model 4) were all sufficient, although items 4 and 5 had somewhat lower factor loadings. The identity issues in these items (sexual orientation and behavior and religiosity) might be less often stressful for the young adults in our sample, resulting in these lower factor loadings.

[7] A significant reduction in model fit was concluded if two of the following three criteria were met: $\Delta\chi^2$ significant at $p < .050$, ΔCFI > -.010, and ΔRMSEA > .015 (Chen, 2007; Cheung & Rensvold, 2002).

Table S3.3 | Dutch Identity Distress Survey and Descriptive Statistics

Items	*M*	*SD*	Min	Max
1. Lange termijn doelen? (bijv., een goede baan vinden, een romantische relatie hebben, etc.)	3.18	1.05	1	5
2. Carrièrekeuze? (bijv., een beroepskeuze maken etc.)	2.86	1.08	1	5
3. Vriendschappen? (bijv., een verandering of verlies in vriendschap ervaren, etc.)	2.72	1.19	1	5
4. Seksuele oriëntatie en gedrag? (bijv., verward zijn over seksuele voorkeur, intensiteit van seksuele behoeftes, etc.)	1.83	1.09	1	5
5. Religie? (bijv., gestopt met geloven, een verandering in je geloof in God/religie, etc.)	1.24	0.69	1	5
6. Waarden en overtuigingen? (bijv., verward voelen over wat juist of onjuist is, etc.)	2.10	1.04	1	5
7. Groepsloyaliteit? (bijv., horen bij een club, schoolgroep, vriendengroep, etc.)	2.50	1.09	1	5
8. Beoordeel alsjeblieft jouw algemene niveau van *ongemak* (hoe slecht ze jou lieten voelen) met betrekking tot alle bovenstaande problemen in zijn geheel die jou mogelijk van streek hebben gemaakt.	2.78	0.95	1	5
9. Beoordeel alsjeblieft in welke mate onzekerheid over deze problemen in zijn geheel jouw leven in de weg heeft gezeten (bijvoorbeeld, het heeft je gestopt dingen te doen die je wilde doen, of om gelukkig te zijn).	2.67	1.10	1	5
10. Hoelang heb je je ontdaan, overstuur of bezorgd gevoeld over deze problemen in zijn geheel?	2.53	1.36	1	5

Note. Instruction: In welke mate was je recentelijk ontdaan, overstuur of maakte je je zorgen over de volgende problemen in jouw leven? Answer categories items 1 to 9: (1) Helemaal niet, (2) Nauwelijks, (3) Tamelijk, (4) Ernstig, (5) Zeer ernstig. Answer categories item 10: (1) Nooit of minder dan 1 maand, (2) 1 tot 3 maanden, (3) 3 tot 6 maanden, (4) 6 tot 12 maanden, (5) meer dan 12 maanden.

Table S3.4 | Inter-item Correlations for the Identity Distress Survey

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9
Item 1									
Item 2	.52***								
Item 3	.36***	.22***							
Item 4	.12*	.07	.26***						
Item 5	.17**	.16**	.16**	.07					
Item 6	.19***	.16**	.26***	.23***	.26***				
Item 7	.28***	.22***	.50***	.20***	.10	.26***			
Item 8	.53***	.34***	.47***	.23***	.23***	.40***	.39***		
Item 9	.50***	.40***	.45***	.16**	.16**	.34***	.38***	.60***	
Item 10	.45***	.30***	.34***	.26***	.22***	.19***	.28***	.49***	.56***

*$p < .05$. **$p < .01$. ***$p < .001$.

Table S3.5 | Model Fit of Confirmatory Factor Analyses for the Identity Distress Survey

Model		χ^2	*df*	*p*	RMSEA	90% CI RMSEA	CFI
Model 1:	1 factor	100.00	27	<.001	.09	.073 - .112	.89
Model 2:	2 factors	99.66	26	<.001	.09	.075 - .114	.89
Model 3:	2 factors + *r* item 1 – 2[a]	65.32	25	<.001	.07	.050 - .092	.94
Model 4:	2 factors + *r*s item 1 – 2, and 3 – 7[a]	39.12	24	.027	.04	.015 - .069	.98

Note. [a] *r* item x – x means that we included a correlation between the residuals of these specific items.

Table S3.6 | Standardized Parameter Estimates of the Confirmatory Factor Analyses for the Identity Distress Survey

	Model 1	Model 2		Model 3		Model 4	
Factor loadings	Factor 1	Factor 1	Factor 2	Factor 1	Factor 2	Factor 1	Factor 2
Item 1	.65	.66		.62		.62	
Item 2	.50	.50		.44		.44	
Item 3	.61	.62		.63		.57	
Item 4	.28	.28		.29		.27	
Item 5	.27	.27		.27		.27	
Item 6	.45	.45		.46		.46	
Item 7	.53	.53		.54		.48	
Item 8	.79		.79		.80		.80
Item 9	.75		.75		.75		.75
Correlations							
Factor 1 – 2		.98		.99		1.05	
Item 1 – 2				.35		.35	
Item 3 – 7						.31	

Relatedness - Balanced Measure of Psychological Needs

Relatedness is one of the subscales of the Balanced Measure of Psychological Needs, originally developed by Sheldon and Hilpert (2012). The Dutch version of this subscale and the descriptive statistics per item are listed in Table S3.7. The inter-item correlations, shown in Table S3.8, indicated that most items were significantly positively associated with other items. Only for item 6 these correlations were somewhat lower, and only significant for other reversed items.

Similar to the original English version, a confirmatory factor analysis showed that only a one-factor model did not produce adequate fit (Sheldon & Hilpert, 2012), $\chi^2(9) = 100.69$, $p < .001$, CFI = .78, RMSEA = .18, 90% CI of RMSEA [.148, .211]. Based on the approach by Sheldon and Hilpert (2012) we constructed a bifactor model. This model consisted of one trait factor on which all six items loaded. In addition, this model contained two method factors, one for positively phrased items and one for negatively phrased items. This bifactor model had a sufficient model fit, $\chi^2(3) =$

6.91, p = .075, CFI = .99, RMSEA = .06, 90% CI of RMSEA [.000, .128], that was significantly better than the one-factor model, $\Delta\chi2(6) = 93.78$, $p < .001$, ΔCFI = .213, ΔRMSEA = -.114. The items also had sufficient factor loadings (see Table S3.8). Only the factor loading of item 6 on the trait factor was somewhat lower. This item loaded primarily high on the method factor.

Table S3.7 | Dutch Relatedness Subscale of the Balanced Measure of Psychological Needs and Descriptive Statistics

Items	*M*	*SD*	Min	Max
1. Ik ervaarde een gevoel van contact met mensen die om mij geven, en waar ik om geef.	4.17	0.76	2	5
2. Ik was eenzaam. (*Reversed item*)	3.35	1.23	1	5
3. Ik voelde me hecht en verbonden met andere mensen die belangrijk voor me zijn.	3.99	0.83	2	5
4. Ik voelde me niet gewaardeerd door één of meer mensen die voor mij belangrijk zijn. (*Reversed item*)	3.40	1.36	1	5
5. Ik ervaarde een sterk gevoel van intimiteit met de mensen waar ik mee om ga.	3.48	1.01	1	5
6. Ik had onenigheden of conflicten met mensen waar ik normaal goed mee op kan schieten. (*Reversed item*)	3.49	1.18	1	5

Note. Instruction: Lees ieder van de volgende stellingen zorgvuldig en ga na in hoeverre deze op u van toepassing zijn. Answer categories: (1) Niet van toepassing, (3) Redelijk van toepassing, (5) Zeer van toepassing.

Table S3.8 | Inter-item Correlations and Factor Loadings for the Relatedness Subscale of the Balanced Measure of Psychological Needs

	Inter-item correlations					Model 1	Model 2		
	Item 1	Item 2	Item 3	Item 4	Item 5	Factor 1	Trait factor 1	Method factor 1	Method factor 2
Item 1						.73	.50	.52	
Item 2	.23***					.39	.46		.43
Item 3	.62***	.35***				.86	.75	.48	
Item 4	.18**	.42***	.20***			.26	.29		.65
Item 5	.46***	.17**	.52***	.03		.60	.33	.56	
Item 6	.10	.25***	.04	.34***	-.02	.10	.07		.49

**$p < .01$. ***$p < .001$.

Table S3.9 | Standardized Coefficients of the Multiple Regression Analyses with Comparative Distinctiveness – Repertory Grid, General Distinctiveness, and Identification with Commitment as Independent Variables

	Dependent variables					
	Identity issues distress		Global identity distress		Ruminative exploration	
Independent variables	β Model 1	β Model 2	β Model 1	β Model 2	β Model 1	β Model 2
Comparative distinctiveness - Repertory Grid	.14*	.11*	.06	.04	.12*	.05
General distinctiveness	-.07	.01	-.15**	-.10	-.08	.07
Identification with commitment		-.39***		-.26***		-.68***
	Relatedness		Parent-related loneliness		Peer-related loneliness	
	β Model 1	β Model 2	β Model 1	β Model 2	β Model 1	β Model 2
Comparative distinctiveness - Repertory Grid	-.28***	-.26***	.22***	.22***	.18**	.15**
General distinctiveness	.14*	.11*	-.06	-.04	-.15**	-.09
Identification with commitment		.14**		-.09		-.30***
	Self-esteem		Life satisfaction			
	β Model 1	β Model 2	β Model 1	β Model 2		
Comparative distinctiveness - Repertory Grid	-.15**	-.11*	-.20***	-.17***		
General distinctiveness	.37***	.29***	.12*	.05		
Identification with commitment		.39***		.31***		
	Narcissistic admiration		Narcissistic rivalry			
	β Model 1	β Model 2	β Model 1	β Model 2		
Comparative distinctiveness - Repertory Grid	-.01	.00	.23***	.22***		
General distinctiveness	.46***	.43***	.17**	.21***		
Identification with commitment		.14**		-.16**		

*$p < .05$. **$p < .01$. ***$p < .001$.

Curvilinear Relationships

An alternative approach to examine possible drawbacks of distinctiveness is to examine curvilinear relationships between distinctiveness and psychosocial well-being. A curvilinear relationship could be expected, as theories state that individuals search for an optimal/moderate sense of distinctiveness (Brewer, 1991; Snyder & Fromkin, 1980). Following this line of reasoning, a moderate level of general distinctiveness would be most adaptive, while very low and very high levels are more maladaptive. Regarding comparative distinctiveness from important others, it could be that both extremely low and high comparative distinctiveness from important others are more maladaptive as they form a threat to individuals' need for distinctiveness and need for social inclusion, respectively. We tested these broad expectations across all available indicators of psychosocial well-being. These analyses should be viewed as exploratory, and were only added after the pre-registration of Study 2.

In hierarchical regression analyses we tested whether a curvilinear relationship added significant incremental predictive value, after controlling for the linear relationship. In each first step, one of the distinctiveness variables was entered as a predictor. In the second step, the squared variable of this distinctiveness variable (centered on the mean) was added. We tested curvilinear associations of comparative distinctiveness from important others based on the Big Five and general distinctiveness with identification with commitment, identity issues distress, global identity distress, ruminative exploration, relatedness, parent-related loneliness, peer-related loneliness, self-esteem, life satisfaction, narcissistic admiration, and narcissistic rivalry within the samples of Study 1 and 2. In most of these cases, a curvilinear relationship did not predict significantly more variance, $\Delta R^2 \leq .01$, $p \geq .053$. Across studies, the curvilinear relationship was significant in 7 out of the 44 tested relationships. In Study 1, comparative distinctiveness was curvilinearly related to identification with commitment, ruminative exploration, and parent-related loneliness. In Study 2, comparative distinctiveness from important others was curvilinearly related to identity issues distress and global identity distress. Furthermore, in this study, general distinctiveness was related to global identity distress and ruminative exploration in a curvilinear manner. These significant findings are displayed in Table S3.9 and in Figures S3.1 to S3.7.

The U-shaped association of general distinctiveness with global identity distress and ruminative exploration in Study 2 was in line with the idea that a moderate level of distinctiveness is most beneficial (Snyder & Fromkin, 1980). However, the finding that a very high level of comparative distinctiveness from important others was generally linked with indicators of more adaptive identity

formation than a moderate level was unexpected. We would expect that these high levels of comparative distinctiveness form a threat to individuals' social inclusion, and would therefore be associated with more maladaptive identity formation. Individuals scoring really high on comparative distinctiveness have constructed identities that are largely opposing how they perceive others in their context. Possibly, these are young adults with a relatively high need for distinctiveness (Snyder & Fromkin, 1980), who have let go of their childhood identifications (Erikson, 1968). Instead these young adults seem to hold on to identities that largely oppose identities of those in their interpersonal context (similar to the concept of negative identity; Erikson, 1968) which might help them to cope with identity formation on the short run.

Our findings on the curvilinear relationships of distinctiveness with psychosocial well-being might be informative for future studies on the adaptiveness of distinctiveness. Nevertheless, it should be taken into account that our findings on curvilinear relationships were not consistently replicated across our studies, while the linear associations were generally replicated.

Table S3.10 | Significant Findings from Hierarchical Regression Analyses Testing Curvilinear Relationships

Independent variables		Dependent variables					
		Identification with commitment		Ruminative exploration		Parent-related loneliness	
Study 1		β	ΔR^2	β	ΔR^2	β	ΔR^2
Step 1:	Comparative distinctiveness	-.02	.00	.13*	.02*	.07	.00
Step 2:	Comparative distinctiveness	-.01	.01*	.11*	.01*	.06	.02*
	Comparative distinctiveness^2	-.12*		-.11*		-.12*	
		Identity issues distress		Global identity distress			
Study 2		β	ΔR^2	β	ΔR^2		
Step 1:	Comparative distinctiveness	.02	.00	-.03	.00		
Step 2:	Comparative distinctiveness	.02	.03*	-.04	.02*		
	Comparative distinctiveness^2	-.16*		-.13*			
		Global identity distress		Ruminative exploration			
		β	ΔR^2	β	ΔR^2		
Step 1:	General distinctiveness	-.23***	.05***	-.23***	.05***		
Step 2:	General distinctiveness	-.18**	.02*	-.17*	.02*		
	General distinctiveness^2	.14*		.16*			

Note. Comparative distinctiveness = Comparative distinctiveness from important others based on the Big Five.
*p < .05. **p < .01. ***p < .001.

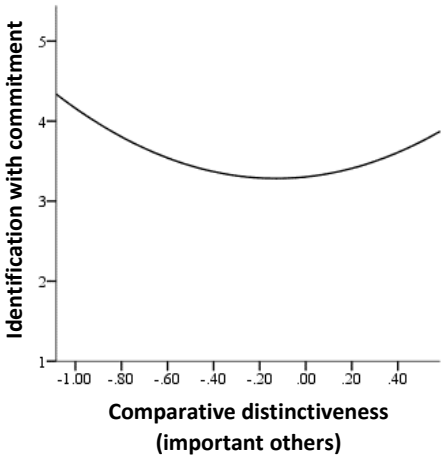

Figure S3.1 | Curvilinear relationship between comparative distinctiveness from important others (Big Five) and identification with commitment in Study 1.

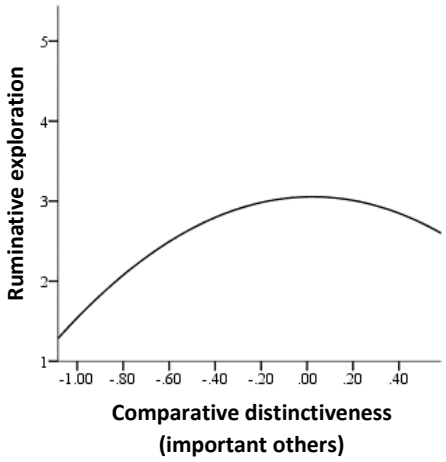

Figure S3.2 | Curvilinear relationship between comparative distinctiveness from important others (Big Five) and ruminative exploration in Study 1.

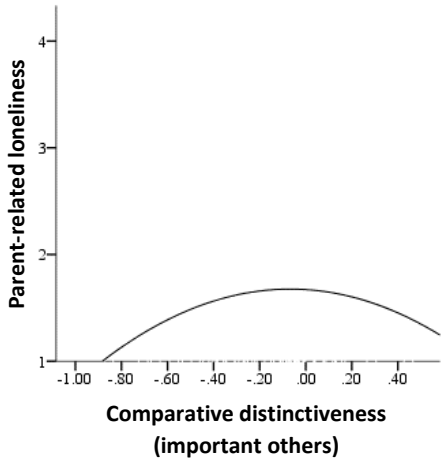

Figure S3.3 | Curvilinear relationship between comparative distinctiveness from important others (Big Five) and parent-related loneliness in Study 1.

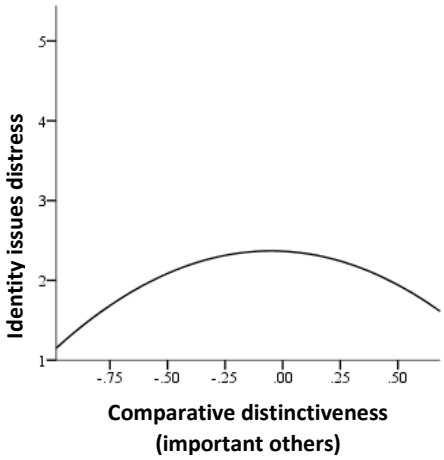

Figure S3.4 | Curvilinear relationship between comparative distinctiveness from important others (Big Five) and identity issues distress in Study 2.

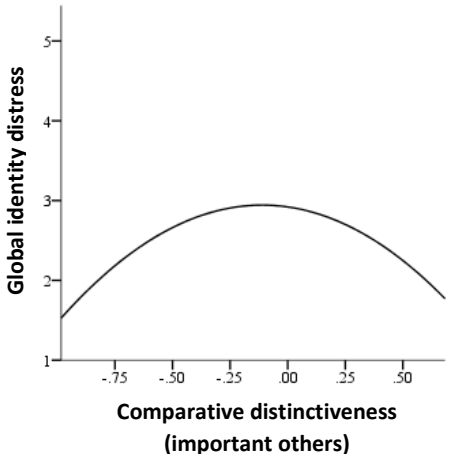

Figure S3.5 | Curvilinear relationship between comparative distinctiveness from important others (Big Five) and global identity distress in Study 2.

Figure S3.6 | Curvilinear relationship between general distinctiveness and global identity distress in Study 2.

Figure S3.7 | Curvilinear relationship between general distinctiveness and ruminative exploration in Study 2.

Meta-Analytic Aggregation

Findings of Study 1 and Study 2 were meta-analytically aggregated using random effect models (Lipsey & Wilson, 2001). In all computations, effect sizes were transformed to Fisher's *Z* and later converted back.

Table S3.11 | Meta-Analytic Aggregation of Correlations from Study 1 and Study 2

	Comparative distinctiveness			General distinctiveness			Identification with commitment		
Variable	Weighted mean *r*	95% CI	Q	Weighted mean *r*	95% CI	Q	Weighted mean *r*	95% CI	Q
Comparative distinctiveness									
General distinctiveness	.05	[-.03, .14]	0.12						
Identification with commitment	-.03	[-.11, .05]	0.07	**.28**	**[.14, .40]**	2.92			
Maladaptive identity formation									
Identity issues distress	.06	[-.02, .14]	0.57	**-.10**	**[-.18, -.02]**	0.41	**-.32**	**[-.47, -.16]**	4.38*
Global identity distress	.02	[-.07, .12]	1.38	**-.19**	**[-.26, -.11]**	0.86	**-.34**	**[-.45, -.22]**	2.54
Ruminative exploration	.04	[-.12, .21]	4.03*	**-.15**	**[-.30, .00]**	3.25	**-.65**	**[-.70, -.60]**	1.21
Social well-being									
Relatedness	**-.17**	**[-.25, -.09]**	0.01	**.19**	**[.10, .28]**	1.31	**.24**	**[.14, .33]**	1.52
Parent-related loneliness	**.09**	**[.01, .17]**	0.45	-.13	[-.27, .00]	2.72	**-.14**	**[-.22, -.06]**	0.36
Peer-related loneliness	.09	[.00, .18]	1.29	**-.19**	**[-.27, -.11]**	0.84	**-.27**	**[-.39, -.14]**	2.71
Psychological well-being									
Self-esteem	-.03	[-.14, .08]	1.72	**.40**	**[.33, .47]**	0.50	**.51**	**[.42, .59]**	1.91
Life satisfaction	-.07	[-.16, .01]	0.03	**.17**	**[.08, .27]**	1.39	**.39**	**[.29, .48]**	1.98
Narcissistic strategies									
Narcissistic admiration	-.03	[-.14, .08]	1.83	**.47**	**[.40, .53]**	0.10	**.34**	**[.11, .53]**	8.37**
Narcissistic rivalry	.05	[-.11, .20]	3.70	.06	[-.14, .26]	5.79*	**-.10**	**[-.18, -.02]**	0.81

Note. CI = Confidence interval. βs and CIs with 95% CIs that do not include zero are boldface ($p < .05$).
* $p < .05$. ** $p < .01$.

Table S3.12 | Meta-Analytic Aggregation of Multiple Regression Results from Study 1 and Study 2

	Dependent variables											
	Identity issues distress						Global identity distress					
Independent variables	β M1	95% CI M1	Q M1	β M2	95% CI M2	Q M2	β M1	95% CI M1	Q M1	β M2	95% CI M2	Q M2
Comparative distinctiveness	.07	[-.02, .15]	0.58	.05	[-.03, .13]	0.55	.03	[-.07, .13]	1.44	.02	[-.09, .13]	1.79
General distinctiveness	**-.11**	**[-.19, -.02]**	0.34	-.03	[-.11, .06]	0.48	**-.19**	**[-.27, -.11]**	0.72	**-.10**	**[-.18, -.02]**	0.00
Identification with commitment				**-.31**	**[-.47, -.12]**	5.44*				**-.31**	**[-.41, -.20]**	2.08
	Ruminative exploration						Relatedness					
	β M1	95% CI M1	Q M1	β M2	95% CI M2	Q M2	β M1	95% CI M1	Q M1	β M2	95% CI M2	Q M2
Comparative distinctiveness	.05	[-.11, .21]	3.93*	.02	[-.15, .19]	4.43*	**-.18**	**[-.26, -.10]**	0.01	**-.17**	**[-.25, -.09]**	0.04
General distinctiveness	**-.16**	**[-.29, -.02]**	2.83	.03	[-.06, .11]	0.70	**.20**	**[.12, .28]**	1.16	**.15**	**[.07, .23]**	0.28
Identification with commitment				**-.65**	**[-.71, -.59]**	1.81				**.19**	**[.11, .27]**	0.59
	Parent-related loneliness						Peer-related loneliness					
	β M1	95% CI M1	Q M1	β M2	95% CI M2	Q M2	β M1	95% CI M1	Q M1	β M2	95% CI M2	Q M2
Comparative distinctiveness	**.10**	**[.02, .18]**	0.50	**.10**	**[.01, .18]**	0.46	**.10**	**[.00, .19]**	1.36	.09	[.00, .18]	1.27
General distinctiveness	**-.13**	**[-.21, -.05]**	2.73	**-.10**	**[-.19, -.02]**	2.22	**-.19**	**[-.27, -.11]**	0.68	**-.14**	**[-.22, -.05]**	1.06
Identification with commitment				**-.10**	**[-.18, -.02]**	0.00				**-.23**	**[-.39, -.05]**	4.52*
	Self-esteem						Life satisfaction					
	β M1	95% CI M1	Q M1	β M2	95% CI M2	Q M2	β M1	95% CI M1	Q M1	β M2	95% CI M2	Q M2
Comparative distinctiveness	-.05	[-.17, .07]	2.05	-.03	[-.16, .10]	2.47	-.08	[-.16, .00]	0.03	-.07	[-.15, .02]	0.09
General distinctiveness	**.41**	**[.33, .47]**	0.36	**.29**	**[.21, .36]**	0.17	**.18**	**[.08, .27]**	1.31	.07	[-.01, .15]	0.06
Identification with commitment				**.43**	**[.36, .49]**	0.79				**.37**	**[.28, .45]**	1.33
	Narcissistic admiration						Narcissistic rivalry					
	β M1	95% CI M1	Q M1	β M2	95% CI M2	Q M2	β M1	95% CI M1	Q M1	β M2	95% CI M2	Q M2
Comparative distinctiveness	-.05	[-.15, .05]	1.45	-.04	[-.13, .05]	1.10	.04	[-.11, .19]	3.18	.04	[-.11, .18]	3.05
General distinctiveness	**.47**	**[.40, .53]**	0.14	**.41**	**[.34, .47]**	0.58	.06	[-.13, .25]	5.29*	.09	[-.12, .29]	6.40*
Identification with commitment				**.22**	**[.14, .29]**	4.66*				-.12	[-.23, .00]	2.02

Note. M1 = Model 1 (Independent variables are comparative distinctiveness from important others based on the Big Five and general distinctiveness); M2 = Model 2 (Identification with commitment is added as independent variable). βs represent weighted mean βs across the two studies. βs and CIs with 95% CIs that do not include zero are boldface ($p < .05$).
* $p < .05$.

REFERENCES

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*, 469-480. doi:10.1037/0003-066x.55.5.469

Back, M. D., Küfner, A. C. P., Dufner, M., Gerlach, T. M., Rauthmann, J. F., & Denissen, J. J. A. (2013). Narcissistic admiration and rivalry: Disentangling the bright and dark sides of narcissism. *Journal of Personality and Social Psychology, 105*, 1013-1037. doi:10.1037/a0034431

Becker, M., Vignoles, V. L., Owe, E., Brown, R., Smith, P. B., Easterbrook, M., . . . Yamakoglu, N. (2012). Culture and the distinctiveness motive: Constructing identity in individualistic and collectivistic contexts. *Journal of Personality and Social Psychology, 102*, 833-855. doi:10.1037/a0026853

Berman, S. L., Montgomery, M. J., & Kurtines, W. M. (2004). The development and validation of a measure of identity distress. *Identity, 4*, 1-8. doi:10.1207/s1532706xid0401_1

Brewer, M. B. (1991). The social self: On being the same and different at the same time. *Personality and Social Psychology Bulletin, 17*, 475-482. doi:10.1177/0146167291175001

Byrne, B. M. (2013). *Structural equation modeling with Mplus: Basic concepts, applications, and programming*. New York, NY: Routledge.

Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal, 14*, 464-504. doi:10.1080/10705510701301834

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal, 9*, 233-255. doi:10.1207/S15328007SEM0902_5

Cicognani, E., Klimstra, T., & Goossens, L. (2014). Sense of community, identity statuses, and loneliness in adolescence: A cross-national study on Italian and Belgian youth. *Journal of Community Psychology, 42*, 414-432. doi:10.1002/jcop.21618

Codol, J.-P. (1981). Une approche cognitive du sentiment d'identité [A cognitive approach to the feeling of identity]. *Social Science Information, 20*, 111-136. doi:10.1177/053901848102000105

Crocetti, E., Rubini, M., & Meeus, W. (2008). Capturing the dynamics of identity formation in various ethnic groups: Development and validation of a three-dimensional model. *Journal of Adolescence, 31*, 207-222. doi:10.1016/j.adolescence.2007.09.002

Davis, M. H. (2017). Social projection to liked and disliked targets: The role of perceived similarity. *Journal of Experimental Social Psychology, 70*, 286-293. doi:10.1016/j.jesp.2016.11.012

De Bonis, M., De Boeck, P., Lida-Pulik, H., & Féline, A. (1995). Identity disturbances and self-other differentiation in schizophrenics, borderlines, and normal controls. *Comprehensive Psychology, 36*. doi:10.1016/S0010-440X(95)90117-5

Demir, M., Şimşek, Ö. F., & Procsal, A. D. (2013). I am so happy 'cause my best friend makes me feel unique: Friendship, personal sense of uniqueness and happiness. *Journal of Happiness Studies, 14*, 1201-1224. doi:10.1007/s10902-012-9376-9

Denissen, J. J. A., Geenen, R., Selfhout, M., & van Aken, M. A. G. (2007). Single-item big five ratings in a social network design. *European Journal of Personality, 22*, 37-54. doi:10.1002/per.662

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment, 49*, 71-75. doi:10.1207/s15327752jpa4901_13

Donnellan, M. B., Lucas, R. E., & Cesario, J. (2015). On the association between loneliness and bathing habits: Nine replications of Bargh and Shalev (2012) Study 1. *Emotion, 15*, 109-119. doi:10.1037/a0036079

Erikson, E. H. (1968). *Identity: Youth and crisis*. New York, NY: Norton.

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*, 175-191. doi:10.3758/BF03193146

Feixas, G., Erazo-Caicedo, M. I., Harter, S. L., & Bach, L. (2008). Construction of self and others in unipolar depressive disorders: A study using repertory grid technique. *Cognitive Therapy and Research, 32*, 386-400. doi:10.1007/s10608-007-9149-7

Furr, R. M. (2008). A framework for profile similarity: Integrating similarity, normativeness, and distinctiveness. *Journal of Personality, 76*, 1267-1316. doi:10.1111/j.1467-6494.2008.00521.x

Harter, S. (2012). *The construction of the self: Developmental and sociocultural foundations* (2nd ed.). New York, NY: Guilford.

Hernandez, L., Montgomery, M. J., & Kurtines, W. M. (2006). Identity distress and adjustment problems in at-risk adolescents. *Identity, 6*, 27-33. doi:10.1207/s1532706xid0601_3

Kelly, G. A. (1955). *The psychology of personal constructs*. New York, NY: Norton.

Kernberg, O. F., & Caligor, E. (2005). A psychoanalytic theory of personality disorders. In M. F. Lenzenweger & J. F. Clarkin (Eds.), *Major theories of personality disorder* (2nd ed., pp. 114-156). New York, NY: The Guilford Press.

Koepke, S., & Denissen, J. J. A. (2012). Dynamics of identity development and separation–individuation in parent–child relationships during adolescence and emerging adulthood: A conceptual integration. *Developmental Review, 32*, 67-88. doi:10.1016/j.dr.2012.01.001

Lee, I. A., & Preacher, K. J. (2013, September). Calculation for the test of the difference between two dependent correlations with one variable in common [Computer software]. Retrieved from http://quantpsy.org

Lipsey, M. W., & Wilson, D. B. (2001). *Practical meta-analysis*. Thousand Oaks, CA: Sage.

Luyckx, K., Goossens, L., Soenens, B., & Beyers, W. (2006). Unpacking commitment and exploration: Preliminary validation of an integrative model of late adolescent identity formation. *Journal of Adolescence, 29*, 361-378. doi:10.1016/j.adolescence.2005.03.008

Luyckx, K., Schwartz, S. J., Berzonsky, M. D., Soenens, B., Vansteenkiste, M., Smits, I., & Goossens, L. (2008). Capturing ruminative exploration: Extending the four-dimensional model of identity formation in late adolescence. *Journal of Research in Personality, 42*, 58-82. doi:10.1016/j.jrp.2007.04.004

Luyckx, K., Vansteenkiste, M., Goossens, L., & Duriez, B. (2009). Basic need satisfaction and identity formation: Bridging self-determination theory and process-oriented identity research. *Journal of Counseling Psychology, 56*, 276-288. doi:10.1037/a0015349

Marcia, J. E. (1966). Development and validation of ego-identity status. *Journal of Personality and Social Psychology, 3*, 551-558. doi:10.1037/h0023281

Marcoen, A., Goossens, L., & Caes, P. (1987). Loneliness in pre- through late adolescence: Exploring the contributions of a multidimensional approach. *Journal of Youth and Adolescence, 16*, 561-577. doi:10.1007/BF02138821

Meade, A. W., & Craig, S. B. (2012). Identifying careless responses in survey data. *Psychological Methods, 17*, 437-455. doi:10.1037/a0028085

Meeus, W. (2011). The study of adolescent identity formation 2000–2010: A review of longitudinal research. *Journal of Research on Adolescence, 21*, 75-94. doi:10.1111/j.1532-7795.2010.00716.x

Montoya, R. M., Horton, R. S., & Kirchner, J. (2008). Is actual similarity necessary for attraction? A meta-analysis of actual and perceived similarity. *Journal of Social and Personal Relationships, 25*, 889-922. doi:10.1177/0265407508096700

Morry, M. M. (2005). Relationship satisfaction as a predictor of similarity ratings: A test of the attraction-similarity hypothesis. *Journal of Social and Personal Relationships, 22*, 561-584. doi:10.1177/0265407505054524

Morry, M. M. (2007). The attraction-similarity hypothesis among cross-sex friends: Relationship satisfaction, perceived similarities, and self-serving perceptions. *Journal of Social and Personal Relationships, 24*, 117-138. doi:10.1177/0265407507072615

Muthén, L. K., & Muthén, B. O. (1998-2015). *Mplus user's guide* (7th ed.). Los Angeles, CA: Author.

Pasupathi, M. (2014). Identity development: Dialogue between normative and pathological developmental approaches. *Journal of Personality Disorders, 28*, 113-120. doi:10.1521/pedi.2014.28.1.113

Pilarska, A. (2014). Self-construal as a mediator between identity structure and subjective well-being. *Current Psychology, 33*, 130-154. doi:10.1007/s12144-013-9202-5

Pilarska, A., & Suchańska, A. (2015). The identity processes and the sense of identity: Interrelations and significance to the capacity for closeness. *Studia Psychologiczne, 53*, 87-100. doi:10.2478/V1067-010-0142-3

Rogers, K. H., Wood, D., & Furr, R. M. (2018). Assessment of similarity and self-other agreement in dyadic relationships: A guide to best practices. *Journal of Social and Personal Relationships, 35*, 112-134. doi:10.1177/0265407517712615

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Schwartz, S. J., Beyers, W., Luyckx, K., Soenens, B., Zamboanga, B. L., Forthun, L. F., . . . Waterman, A. S. (2011). Examining the light and dark sides of emerging adults' identity: A study of identity status differences in positive and negative psychosocial functioning. *Journal of Youth and Adolescence, 40*, 839-859. doi:10.1007/s10964-010-9606-6

Selfhout, M., Denissen, J., Branje, S., & Meeus, W. (2009). In the eye of the beholder: Perceived, actual, and peer-rated similarity in personality, communication, and friendship intensity during the acquaintanceship process. *Journal of Personality and Social Psychology, 96*, 1152-1165. doi:10.1037/a0014468

Sheldon, K. M., & Hilpert, J. C. (2012). The balanced measure of psychological needs (BMPN) scale: An alternative domain general measure of need satisfaction. *Motivation and Emotion, 36*, 439-451. doi:10.1007/s11031-012-9279-4

Sica, L. S., Sestito, L. A., & Ragozini, G. (2014). Identity coping in the first years of university: Identity diffusion, adjustment and identity distress. *Journal of Adult Development, 21*, 159-172. doi:10.1007/s10804-014-9188-8

Şimşek, Ö. F., & Yalınçetin, B. (2010). I feel unique, therefore I am: The development and preliminary validation of the Personal Sense of Uniqueness (PSU) scale. *Personality and Individual Differences, 49*, 576-581. doi:10.1016/j.paid.2010.05.006

Snyder, C. R., & Fromkin, H. L. (1980). *Uniqueness: The human pursuit of difference*. New York, NY: Plenum Press.

Steiger, J. H. (1980). Tests for comparing elements of a correlation matrix. *Psychological Bulletin, 87*, 245-251. doi:10.1037/0033-2909.87.2.245

Van Doeselaar, L., Becht, A. I., Klimstra, T. A., & Meeus, W. H. J. (2018). A review and integration of three key components of identity development: Distinctiveness, coherence, and continuity. *European Psychologist, 23*, 278-288. doi:10.1027/1016-9040/a000334

Vignoles, V. L. (2011). Identity motives. In S. J. Schwartz, K. Luyckx, & V. L. Vignoles (Eds.), *Handbook of identity theory and research* (pp. 403-432). New York, NY: Springer.

Vignoles, V. L., Chryssochoou, X., & Breakwell, G. M. (2000). The distinctiveness principle: Identity, meaning, and the bounds of cultural relativity. *Personality and Social Psychology Review, 4*, 337-354. doi:10.1207/S15327957PSPR0404_4

Vignoles, V. L., Regalia, C., Manzi, C., Golledge, J., & Scabini, E. (2006). Beyond self-esteem: Influence of multiple motives on identity construction. *Journal of Personality and Social Psychology, 90*, 308-333. doi:10.1037/0022-3514.90.2.308

Weller, J., & Watson, D. (2009). Friend or foe? Differential use of the self-based heuristic as a function of relationship satisfaction. *Journal of Personality, 77*, 731-760. doi:10.1111/j.1467-6494.2009.00563.x

Wood, D., & Furr, R. M. (2016). The correlates of similarity estimates are often misleadingly positive: The nature and scope of the problem, and some solutions. *Personality and Social Psychology Review, 20*, 79-99. doi:10.1177/1088868315581119

Wurst, S. N., Gerlach, T. M., Dufner, M., Rauthmann, J. F., Grosz, M. P., Küfner, A. C. P., . . . Back, M. D. (2017). Narcissism and romantic relationships: The differential impact of narcissistic admiration and rivalry. *Journal of Personality and Social Psychology, 112*, 280-306. doi:10.1037/pspp0000113

CHAPTER 4

Adolescents' Identity Formation: Linking the Narrative and the Dual-Cycle Approach

Van Doeselaar, L., McLean, K. C., Meeus, W., Denissen, J. J. A., & Klimstra, T. A. (2019). Adolescents' identity formation: Linking the narrative and the dual-cycle approach. *Journal of Youth and Adolescence.* Advance online publication. https://doi.org/10.1007/s10964-019-01096-x

ABSTRACT

The narrative and dual-cycle approach conceptualize and operationalize adolescents' identity formation in different ways. While the narrative approach focuses on the construction of an autobiographical life story, the dual-cycle approach focuses on the formation of identity commitments. Although these approaches have different emphases, they are conceptually complementary. Yet, their empirical links and distinctions have only scarcely been investigated. Empirical knowledge on these links in adolescence and across time has been especially lacking. In the present research, it was therefore examined whether key characteristics of adolescents' narration (autobiographical reasoning and agency) were concurrently and prospectively related to engagement in the dual-cycle processes of commitment making, identification with commitment, exploration in breadth, exploration in depth, and ruminative exploration. The findings from a cross-sectional sample of 1,580 Dutch adolescents (M_{age} = 14.7 years, 56% female) demonstrated that autobiographical reasoning was significantly positively associated with the commitment and more adaptive exploration processes (i.e., in breadth and in depth). In addition, agency was significantly positively associated with the commitment processes and exploration in depth. Yet, these associations between the narrative characteristics and dual-cycle processes were only weak. Subsequently, the findings from a two-year longitudinal subsample (n = 242, M_{age} = 14.7 years, 62% female) indicated that on average commitment strength remained stable but exploration increased across middle adolescence. A stronger increase in identification with commitment and adaptive exploration (i.e., in breadth and in depth) was predicted by a higher degree of agency in adolescents' narratives. Overall, these findings indicate that both approaches to identity formation are associated, but the small size of these associations suggests that they predominantly capture unique aspects of identity formation. Both approaches could thus complement and inform each other.

INTRODUCTION

The construction of a personal identity, the primary task of adolescence (Erikson, 1950), is captured in quite distinct ways by two contemporary developmental theories and related methodologies. The narrative approach focuses on the formation of a coherent life story (McAdams, 2001). The dual-cycle approach focuses on the formation and evaluation of identity commitments (Luyckx, Goossens, & Soenens, 2006). These two approaches have different emphases, particularly in methodology, but are conceptually complementary (McLean & Pasupathi, 2012). For example, they might concurrently capture similar processes of identity formation but with different concepts and they might predict developments in each other over time. So far, empirical studies have only captured a fraction of what an integration of these approaches could offer. Empirical studies on links and distinctions between both approaches in adolescence and between the approaches over time are especially lacking. In the present research, it was therefore examined whether key dimensions of both approaches were concurrently associated in a large cross-sectional Dutch adolescent sample (Study 1). In addition, it was examined whether key dimensions of the narrative approach were predictive of adolescents' developments in the dimensions of the dual-cycle approach over time in a longitudinal subsample (Study 2).

Erikson's Views on Identity Formation

The narrative and the dual-cycle approach to the study of identity formation both originated from the writings of Erik H. Erikson, who derived his ideas from clinical observations and his work on psychobiographies. According to Erikson (1968), identity formation is a lifelong process, which becomes increasingly salient during adolescence. This increased salience is triggered by physical changes during puberty, cognitive development, and societal opportunities and expectations. An explicit current example of such a societal expectation is that in the Dutch educational system adolescents have to make choices in their secondary school curriculum at the end of the second or third year (at about age 14-15). By making these choices, adolescents might already rule out specific tertiary educational tracks (see Klimstra, Luyckx, & Meeus, 2012). Triggered by such factors, adolescents become increasingly engaged in (re-)defining themselves in various domains (e.g., occupation, sexuality, ethnicity). Erikson stated that this process takes place within socio-cultural contexts with other people supporting, testing, and (not) recognizing adolescents' identities, with a variety of identity options, but also with constraints offered. By constructing their own personal identity, adolescents can obtain a sense of "progressive continuity between that which [they have] come to be during the long years of childhood and that which [they promise] to become in the anticipated

future" (Erikson, 1968, p. 87). This sense of personal continuity is one of the key aspects of Erikson's conceptualization of an adaptive identity, which is still present in the narrative (McAdams, 2001) and dual-cycle approaches (Van Doeselaar, Becht, Klimstra, & Meeus, 2018). Moreover, both approaches also still recognize the importance of social (e.g., McLean & Jennings, 2012; Van Doeselaar, Meeus, Koot, & Branje, 2016) and cultural (e.g., McLean & Syed, 2015; Negru-Subtirica, Tiganasu, Dezutter, & Luyckx, 2017) contexts for identity formation. Yet, in both approaches distinct, but complementary, theoretical ideas on the conceptualization of an (adaptive) personal identity and how a personal identity is constructed and maintained have been added to those of Erikson.

Narrative Identity

According to McAdams' life story model of identity, a coherent personal identity is an internalized life story that answers the question who one is and integrates one's past, present, and future (McAdams, 2001). By creating this integrated personal life story individuals can obtain a feeling of personal continuity (McAdams, 2001). A coherent life story, or narrative identity, is deemed to be constructed through the process of narrating momentous events of one's life. Therefore, the characteristics of individuals' autobiographical stories, typically those stories that are central in one's life (critical event narratives; Habermas & Reese, 2015), are studied to investigate identity formation in the narrative identity approach. The narrative identity approach has a relatively broad view on what an adaptive identity entails, compared to the dual-cycle approach. Not only narrative characteristics that contribute to feelings of personal continuity are theorized to be adaptive (e.g., presence of self-event connections; Pasupathi, Mansour, & Brubaker, 2007), but the same is true for other characteristics that are linked with higher well-being (e.g., expressions of agency; Adler, 2012).

Self-event connections. Self-event connections are a common assessment of autobiographical reasoning (Pasupathi et al., 2007). Autobiographical reasoning entails linking personally important experiences to each other and to aspects of the self and is necessary to create a coherent and integrated life story (Habermas & Reese, 2015). In childhood, individuals are generally already able to narrate coherently about a single event (Habermas & Reese, 2015). Yet, it is in adolescence that the ability to narrate a coherent life story, in which personally meaningful events and the self are integrated, emerges and continues to develop (Köber, Schmiedek, & Habermas, 2015). This growth in autobiographical reasoning abilities likely not only occurs because of an emerging urge to define the self (McAdams & McLean, 2013), but also because necessary cognitive abilities emerge in adolescence that allow for this kind of integrative work (Habermas & Reese, 2015).

In a self-event connection an individual explicitly links an experienced event to one's sense of self (Pasupathi et al., 2007). An example of this would be stating that an event (e.g., a successful dating experience) caused an enduring change in the self (e.g., becoming less shy). Self-event connections can promote a feeling of personal continuity, because they can both explain personal change over time (e.g., how one became less shy) and mark stability in the self (e.g., not approaching others at various occasions illustrates that one has always been shy; Habermas & Reese, 2015). Although self-event connections could entail negative views on the self (McLean & Pasupathi, 2011), they are theorized to be highly important for the development of a coherent narrative identity (Pasupathi et al., 2007) and are in that sense considered adaptive.

Agency. Apart from the importance of autobiographical reasoning, motivational themes captured in personal narratives have shown to be a key marker of narratives (McLean et al., 2019), and their role in psychological health (Adler, 2012). One of these motivational themes that has been consistently linked to well-being is agency (Adler, Lodi-Smith, Philippe, & Houle, 2016). Agency refers to strivings of individuals to protect and assert themselves, to be autonomous, and to be in control (Bakan, 1966). In narratives that are considered to reflect a high degree of agency, individuals describe themselves as able to influence the course of their life (Adler, 2012). Agency is likely linked to well-being because describing oneself as agentic satisfies individuals' needs to feel competent in effecting their lives and to behave in concordance with their sense of self (Adler, 2012; Deci & Ryan, 2000). Narrating about oneself in an agentic manner might therefore be important to create an adaptive narrative identity. However, the importance of agency might go beyond narrative identity, as agency has been theorized to be linked with the ability to construct satisfying identity commitments (Côté, 1997). Consequently, the present research focused on how agency, as well as self-event connections, relate to processes of commitment and exploration, as captured in the dual-cycle model of identity formation.

Dual-Cycle Model of Identity Formation

Dual-cycle models offer a different perspective on adolescents' identity formation and view identity not as a life story, but as a set of identity commitments. Identity formation is conceptualized as a dual-cycle process of forming and evaluating identity commitments in various relevant domains, such as occupational aspirations (Crocetti, Rubini, & Meeus, 2008; Luyckx et al., 2006). Strong identity commitments are assumed to provide a sense of personal continuity as they provide a sense of direction and certainty regarding the future (Van Doeselaar et al., 2018). Dual-cycle models provide a more detailed approach to Marcia's (1966) original

identity status framework. This framework provided an empirical definition of identity based on Erikson's writings. Although the original dimensions of Marcia's (1966) identity status approach were often assessed by coding interviews, a method that is closer to the methodology of the narrative approach (see Carlsson, Wängqvist, & Frisén, 2015), the dual-cycle dimensions are currently mostly assessed with self-report questionnaires. The present research focused on the five processes and two cycles articulated by Luyckx et al. (2008). The first cycle focuses on the formation of identity commitments, which reflect choices made in identity relevant domains. This cycle encompasses the processes of *exploration in breadth* and *commitment making*. That is, various options to which one could commit are explored and if a satisfying option is found a commitment is made. The second cycle focuses on the evaluation of commitments and encompasses *exploration in depth* and *identification with commitment*. Current commitments are explored by talking with others and reflecting on them. If the outcome of this evaluation is positive, people will increasingly identify with this commitment and integrate it in the self. If the outcome is unsatisfying, however, the first cycle of broader exploration of alternatives might be re-activated.

The processes of exploration in breadth and in depth represent more adaptive processes of exploration, but in both cycles adolescents might also explore in a more maladaptive, ruminative way if they get stuck in a cycle of repetitively thinking over identity options in a passive manner. This is referred to as *ruminative exploration* and is associated with internalizing problems (Luyckx et al., 2008).

Relation of dual-cycle processes to self-event connections. As stated above, the process of making self-event connections is thought to be a form of autobiographical reasoning by which individuals construct their narrative identity and self-concept (Pasupathi et al., 2007). As such, autobiographical reasoning might strengthen adolescents' commitments (McLean & Pasupathi, 2012). By reflecting on the self and constructing a coherent personal life story, adolescents might become better able to make identity choices that fit them. That is, they might use self-ascribed characteristics from their life story (e.g., this event has revealed to me that I am a caring person) in constructing new or strengthening current commitments (e.g., aspiring to a career in nursing). Therefore, adolescents who make self-event connections might not only have stronger commitments concurrently, but might also show an increase in commitment strength over time.

Moreover, the autobiographical reasoning process of making self-event connections could be viewed as an expression of the identity exploration processes (McLean & Pasupathi, 2012). Adolescents who engage in identity exploration might reflect more on their self-views than adolescents who are not engaged in identity exploration. For example, they might explore their self-concept and identity by

reflecting on and learning from experienced events. Accordingly, adolescents who engage more in identity exploration might make more self-event connections concurrently.

Previous studies have examined the link between autobiographical reasoning and commitment and exploration, but have focused on young adulthood, not adolescence (Carlsson et al., 2015; Carlsson, Wängqvist, & Frisén, 2016; Glavan, Negru-Subtirica, & Benga, 2019; McLean & Pratt, 2006; McLean, Syed, & Shucard, 2016; McLean, Syed, Yoder, & Greenhoot, 2014; Merrill, Waters, & Fivush, 2016). Overall, these previous findings indicated small associations between engagement in autobiographical reasoning and the commitment and exploration processes in young adulthood. The present research builds on this previous work by examining the concurrent links between autobiographical reasoning and commitment and exploration in adolescence to determine whether these associations are equally small, smaller, or stronger in adolescence than in young adulthood. Moreover, to the best of our knowledge, the present research was the first to examine the hypothesized prospective effects of autobiographical reasoning on the development of commitment strength.

Relation of dual-cycle processes to agency. Because the construction of identity commitments is a complex and difficult developmental task, which can make adolescents feel uncertain of who they are, viewing oneself as agentic may be helpful for adolescents to manage this task (Koepke & Denissen, 2012; Schwartz, Côté, & Arnett, 2005). For example, viewing oneself as agentic might stimulate adolescents to explore their options and to commit to the option that they view as fitting them best. Moreover, narrating a critical event in a way that expresses personal agency could be especially related to further adaptive identity development because individuals often rely on memories of past events to guide their actions (Philippe, Koestner, Beaulieu-Pelletier, & Lecours, 2011). Adolescents who describe themselves as taking control in events that have been critical for their identity might rely on these narratives in new situations that are important for their identity formation. For instance, a narrative about how an adolescent took the initiative to end an unhealthy friendship might stimulate this adolescent to explore and commit to identity options that more clearly align with relational values. Thus, adolescents who express more agency in critical event narratives than others might be more strongly committed and engage in more adaptive exploration, concurrently and over time.

There are few studies examining narrative agency and commitment and exploration of which we are aware, and none in adolescence. Existing research suggests that agency was more likely to increase in the life stories of young adults who were characterized by strong commitments and exploration (i.e., achieved

identity) across time, compared to those who were committed but lacked exploration (i.e., foreclosed identity) or lacked both commitment and exploration (i.e., diffused identity; Carlsson et al., 2015, 2016). Overall, these limited data from young adults indicate that expressing agency in autobiographical narratives might be positively related to adaptive engagement in the formation and evaluation of commitments.

CURRENT STUDY

The aim in the present research was to examine links between key dimensions of the narrative and the dual-cycle approach to the study of identity formation in adolescence. This research consisted of two stages. First, concurrent associations were examined in a large cross-sectional adolescent sample (Study 1). Next, predictive effects of narrative characteristics on the dual-cycle processes over time were examined in a subsample of adolescents (also included in Study 1) who participated in a subsequent two-year longitudinal study (Study 2). In both studies, adolescents who made a self-event connection in a critical event narrative were compared to those who did not make a self-event connection. In addition, adolescents were compared based on the degree of agency expressed in their critical event narrative. Because making self-event connections is viewed as a way of forming one's identity, it was expected that making a self-event connection would be associated with stronger commitments (i.e., commitment making and identification with commitment) concurrently and a more positive increase in commitment strength over time. Additionally, because making self-event connections could be an expression of identity exploration, agency was expected to be positively associated with engagement in identity exploration (in breadth, in depth, and ruminative) concurrently. A predictive effect of making a self-event connection on changes in exploration was examined in an exploratory manner. Moreover, viewing oneself as agentic and being able to rely on critical event narratives in which the self was agentic was thought to stimulate adaptive formation and evaluation of commitments. Therefore, it was expected that agency would be associated with stronger commitments and more adaptive exploration (i.e., more exploration in breadth and in depth, and less ruminative exploration) concurrently and with more positive increases in commitment strength and engagement in adaptive exploration over time (e.g., relatively more positive changes in exploration in breadth and in depth, and less positive changes in ruminative exploration).

STUDY 1

METHOD

Participants and Procedure

Data for Study 1 were drawn from the first wave of Project-Me, which took place in 2015 and 2016. Participants were recruited from the second and third year of various secondary schools in the Netherlands. Secondary education in the Netherlands is primarily captured by three main levels: pre-vocational education, higher general secondary education, and preparatory scientific education, hereafter referred to as the relatively lower, medium, and higher educational levels, respectively. Participants of classes from all three educational levels were included in Project-Me. Two weeks before participation, parents received information on the study with information on how to opt their child out of the study. Trained research assistants visited adolescents' classes to introduce the study, after which adolescents engaged in a process of consent if they wanted to participate. Of all possible adolescents in the targeted classes, 91% participated in the study. Adolescents who did not participate were not present, had no parental consent, or decided not to participate themselves.

Participants completed an online questionnaire during one class hour (i.e., 45 or 50 minutes) under supervision of the trained assistants. From the 1,941 adolescents who participated, 50 had incomplete data and were not included in the present study. This occurred mainly because these adolescents did not finish the present study's measures within one class hour. These 50 adolescents were younger than the remaining 1,891 adolescents, $t(1937) = 4.67$, $p < .001$, $d = .57$, and less often enrolled in the highest of the three educational levels, $\chi^2(2) = 6.93$, $p = .031$, Cramer's $V = .06$, but did not differ significantly in gender composition, $\chi^2(1) = 1.54$, $p = .214$, $\varphi = .03$.

In the questionnaire adolescents were asked to write a turning point narrative. The majority of adolescents completed this task ($n = 1580$, 83.6%). From those who did not ($n = 311$, 16.4%) some indicated that they could not think of a turning point (59%) or that they did not want to share it (5%), whereas others did not provide a reason (36%). These statements indicated that missing information on narrative characteristics was related to the process of autobiographical narration itself. Writing a turning point narrative or not was not significantly related to age, $t(1887) = 1.83$, $p = .067$, $d = .11$. Yet, girls were more likely to write a narrative (88.8%) than boys (77.7%), $\chi^2(1) = 42.51$, $p < .001$, $\varphi = .15$, and the percentages of adolescents who wrote a narrative differed between the lower (76.7%), medium (82.4%), and higher (87.8%) educational levels, $\chi^2(2) = 23.72$, $p < .001$, $\varphi = .11$. Adolescents who

wrote a narrative scored significantly higher on commitment making, $t(417) = 2.21$, $p = .028$, $d = .14$, identification with commitment, $t(396) = 2.76$, $p = .006$, $d = .18$, exploration in breadth, $t(1889) = 5.87$, $p < .001$, $d = .35$, exploration in depth, $t(420) = 7.01$, $p < .001$, $d = .45$, and ruminative exploration, $t(1889) = 5.24$, $p < .001$, $d = .32$.[8] Overall, these findings indicated that turning point narratives were not missing at random. This should be taken into account when interpreting the current findings.

Analyses focused on the 1,580 adolescents (56.2% female) who wrote a turning point narrative. These adolescents were on average 14.7 years old ($SD = 0.8$, range = 12.6 – 17.4) and enrolled in the lower (18.2%), medium (38.0%), and higher (43.8%) educational levels. Participants were less often enrolled in the lower educational level, compared to the general Dutch population, for which the distribution in the third year of secondary school across these three levels is about 54, 22, and 22% across the lower, medium, and higher level, respectively (Centraal Bureau voor de Statistiek, 2016). Information on ethnicity was only requested from a subsample of the Study 1 sample, participating in the longitudinal part of Project-Me (i.e., Study 2). These findings showed that a large majority of adolescents in Project-Me identified themselves as ethnically Dutch.

Measures

Turning point narratives. Adolescents were asked to write a narrative about an event in which they experienced a turning point in their self-understanding. Turning point narratives were chosen as they have been shown to elicit self-event connections (McLean, Breen, & Fournier, 2010). The instructions to elicit these turning point narratives were modelled after the adolescent adaptation (McLean et al., 2010) of McAdams' (2008) instructions. Adolescents were asked to indicate what happened, when it happened, who was involved, what they were thinking and feeling, why the experience was significant, and what it could say about them and their personality. They could use as many words as needed. If adolescents' responses at least included a topic, their response was judged as a turning point narrative present. Narratives contained on average 121 words ($SD = 82$), ranging from three (e.g., "losing my friend") to 515 words.

Identity commitment and exploration. The Dimensions of Identity Development Scale (DIDS) was used to assess commitment making, identification with commitment, exploration in breadth, exploration in depth, and ruminative exploration with respect to future plans and possible life-paths (Luyckx et al., 2008). Each process was measured with five items to which adolescents could respond

[8] Table S4.1 in the supplemental materials provides the descriptive statistics of the commitment and exploration processes across groups of adolescents with different reasons or no provided reason for not writing a turning point narrative.

using a 5-point scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Examples of items are "I have plans for what I am going to do in the future" (commitment making), "I sense that the direction I want to take in my life will really suit me" (identification with commitment), "I think about different goals that I might pursue" (exploration in breadth), "I talk with other people about my plans for the future" (exploration in depth), and "I worry about what I want to do with my future" (ruminative exploration). Cronbach's αs for the five subscales ranged between .77 and .92.

Narrative Coding

Narrative coding was performed in three steps, independently for self-event connections and agency. First, using existing coding manuals (cited below), a team of researchers discussed the use of the coding system with a subset of turning point narratives. Based on these discussions, coding manuals were slightly adapted to fit the current data (used coding manuals and full information on adaptations can be retrieved from https://osf.io/tnyaf) and final scores on this initial subset were determined. Second, research assistants were trained using these already coded narratives. Third, the turning point narratives were coded by three (for self-event connections) or two trained coders (for agency), who met regularly (after coding a maximum of 50 narratives) to reach consensus on divergent codes. To prevent divergence in application of the coding manuals (i.e., coder drift; Syed & Nelson, 2015), compositions of teams varied throughout the coding process. Examples of coded turning point narratives are shown in Table 4.1.

Self-event connections. Turning point narratives were coded on whether an explicit connection was made between an event and the self (see Pasupathi et al., 2007). Four possible types of connections could be made. First, an event could represent self-stability in two ways: providing an illustrative example of who one is, or is not (i.e., dismiss connection). Second, an event could represent self-change in two ways: an event could have been interpreted to change the self, or to have revealed an aspect of the self. From all coded self-event connections, most involved an event that had changed the self (82%). It was also possible that a turning point narrative did not contain any self-event connection. For the aim of this study, it was only taken into account whether any self-event connection was made (code 1) or none (code 0), which was reliably coded, Fleiss' κ = .71. Most adolescents made one or no self-event connection (91.8%) and only some made two (6.8%) or three (1.5%) self-event connections.

Agency. Using the coding manual by Adler, Skalina, and McAdams (2008), turning point narratives were coded for agency on a 5-point scale. Narratives were

Table 4.1 | Illustration of Turning Point Narratives and Coding Systems

Example turning point narrative	Self-event connection score	Agency score
"I was told that I had to go to a class with a lower educational level, because my grades were too bad. I was very annoyed by this. I realized that school has a big influence on what I can do with my life in the future. I became more serious at school and notice that therefore I have better grades now."	1	4
"My grandmother passed away. I heard it when I came home from school. I felt sad because my grandfather and I had a good relationship. It changed me in the sense that I know that everyone will die at some point and that I also should expect this a little. Every time when people talk about cancer, I get tears in my eyes. Since then I know that I want to become an oncologist."	1	2
"My parents were divorced and years later my father got a new girlfriend in another city and we were going to live there. At first I was excited but as we were getting closer to the move it got harder and harder to leave. When I finally moved I went through a hard time and I still find it equally difficult. I see this as a turning point because this is very difficult for me."	0	0

Note. The examples presented here are composed of parts of narratives by two or three adolescents about a similar event. Additionally, slight changes were made to guarantee anonymity.

coded with a 0 if the participant was described as completely at mercy of circumstances or if they were not written in the first person. A 1 indicated that the participant was somewhat at the mercy of circumstances. A 2 indicated that narratives displayed both agentic and non-agentic elements or lacked information on agency. A 3 indicated that the participant was somewhat agentic. Lastly, a 4 indicated that participants were completely agentic and able to affect their own lives. It was additionally specified that narratives were only rated as non-agentic (0 or 1) if circumstances had a negative influence. This was added because not narrating about one's role in the course of a positive event was not deemed to indicate a lack of agency (e.g., learning from regular ICT lessons in school that one is interested in this field). Thus, such positive narratives were coded as neutral (2; because of a lack of information) and positive events in which the participant played an active role were coded as agentic (3 or 4; e.g., learning from a self-chosen internship that one is interested in a certain field). Moreover, if a change in agency was described (e.g., first I did not buy a t-shirt because others did not like it, but later I realized it only matters whether I like it and I bought it anyway) the current state

of agency was coded. The one-way random intra-class correlation coefficient (ICC) indicated that agency was reliably coded, ICC = .78. The final score for agency, which was used in subsequent analyses, consisted of the average score of two independent ratings.

Strategy of Analysis

In a series of regression analyses it was tested whether self-event connections and agency were significantly associated with each of the commitment and exploration processes. This was tested for self-event connection and agency separately. Additionally, it was tested whether controlling for the length of narratives (i.e., number of words) would alter the findings.

RESULTS

Descriptive Statistics

Descriptive statistics of the commitment and exploration processes are available in Table 4.2. About half of adolescents' turning point narratives contained at least one self-event connection (45.4%). On average, adolescents' narratives were slightly agentic (M = 2.29, SD = 0.90). Adolescents who made a self-event connection scored higher on agency (M = 2.56, SD = 0.94) than those who did not (M = 2.06, SD = 0.80), $t(1410) = 11.14$, $p < .001$, $d = .57$. Turning point narratives that included a self-event connection were significantly longer, $t(1578) = 9.25$, $p < .001$, $d = .47$. Narrative length was not significantly associated with agency, $r = .02$, $p = .537$. Furthermore, narrative length was not significantly associated with commitment making, $r = .02$, $p = .436$, and identification with commitment, $r = .03$, $p = .283$, but was significantly positively associated with exploration in breadth, $r = .15$, $p < .001$, exploration in depth, $r = .11$, $p < .001$, and ruminative exploration, $r = .10$, $p < .001$.

Associations Between Dual-Cycle Processes and Narrative Characteristics

Results of the regression analyses are presented in Table 4.2. Because controlling for narrative length did not substantively affect the strength ($\Delta\beta$ = -.03) or significance of significant associations, the uncontrolled findings are reported. Adolescents who made a self-event connection scored significantly higher than those without a connection on commitment making (M = 3.46, SD = 0.92 vs. M = 3.33, SD = 0.95), identification with commitment (M = 3.64, SD = 0.71 vs. M = 3.53, SD = 0.73), exploration in breadth (M = 3.48, SD = 0.70 vs. M = 3.29, SD = 0.74), and exploration in depth (M = 3.27, SD = 0.72 vs. M = 3.13, SD = 0.74). Making a self-event connection or not was not significantly related to ruminative exploration.

Table 4.2 | Descriptive Statistics and Results of the Regression Analyses in Study 1

Dependent variables:	Commitment making				Identification with commitment				Exploration in breadth				Exploration in depth				Ruminative exploration			
M (*SD*)	3.39 (0.94)				3.58 (0.72)				3.38 (0.73)				3.20 (0.73)				2.52 (0.79)			
Independent variable	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β
Self-event connections	.13	.008	.05	.07	.12	.001	.04	.08	.19	< .001	.04	.13	.14	< .001	.04	.09	.03	.388	.04	.02
Independent variable	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β
Agency	.06	.015	.03	.06	.08	< .001	.02	.11	.04	.082	.02	.04	.06	.005	.02	.07	-.04	.056	.02	-.05

Note. Alternative standardized estimates for the binary independent variable self-event connections representing the difference in commitment making, identification with commitment, exploration in breadth, exploration in depth, and ruminative exploration between making a connection or not in standard deviation units of these dual-cycle processes are .13, .16, .26, .19, and .04, respectively.

Higher agency was significantly associated with higher levels of commitment making, identification with commitment, and exploration in depth. Agency was not significantly associated with exploration in breadth and ruminative exploration.

Sensitivity Analyses

To examine the robustness of these findings on concurrent associations it was tested whether making alternative decisions in the strategy of analysis would affect the results. First, the regression analyses focused on self-event connections were repeated with a variable that contained the number of made self-event connections instead of the dichotomous variable. This resulted in the same significant associations and no substantial changes in standardized regression coefficients, $|\Delta\beta| \leq .006$. Second, it was checked whether omitting participants with a neutral score on agency (i.e., 2) because of a lack of information on agency would alter the findings. Performing the regression analyses focused on agency again in this subsample (n = 969) resulted in a significant association between agency and ruminative exploration, $\beta = -.10$, $p = .001$. Findings on the associations with the other commitment and exploration processes did not change in significance and only slightly in effect size, $|\Delta\beta| \leq .036$. Lastly, it was checked whether treating the missing turning point narratives as missing at random (i.e., assuming that the missing information on self-event connections and agency can be accounted for by information on age, gender, educational level, and the dual-cycle processes) and applying multiple imputation would alter the findings. Including adolescents without narratives and applying multiple imputation did not alter the significance or effect sizes of the concurrent associations between the narrative characteristics and the dual-cycle processes, $|\Delta\beta| < .001$.

Summary of Findings

The findings demonstrated that adolescents who made at least one self-event connection were concurrently more strongly committed and more engaged in the adaptive types of exploration (i.e., in breadth and in depth) than those who did not make a self-event connection. Furthermore, a higher degree of narrative agency was associated with being more strongly committed and exploring more in depth. These findings indicated that narrative characteristics are concurrently associated with the processes of the dual-cycle model in adolescence. Nevertheless, associations were small (the highest standardized regression coefficient was .13), indicating that the narrative and dual-cycle approach are partly unique in the aspects of identity formation that they capture.

STUDY 2

In Study 2, possible predictive effects of narrative characteristics on developments in the processes of the dual-cycle model in adolescence were examined. Characteristics of critical event narratives might foretell how a person changes over time as these might signal strengths that are valuable for the identity formation process, such as having a self-concept rooted in autobiographical stories and viewing the self as agentic. That these strengths are integrated in salient autobiographical narratives might make them especially important for developments in the identity formation process as these narratives are salient and accessible to the individual when entering new situations (Sutin & Robins, 2005). Adolescents might rely on memories of previous salient events to guide their actions and when forming new goals (Philippe et al., 2011). If these memories have been constructed in a more adaptive manner (i.e., demonstrating autobiographical reasoning and agency), this might predict more adaptive identity development. Thus, the characteristics of adolescents' narratives could be used to predict developments in the commitment and exploration processes. Yet, before predicting individual differences, it is important to describe the typical mean-level developmental trends of the commitment and exploration processes

Because identity development becomes a highly salient task in adolescence (Erikson, 1950), commitment strength and engagement in exploration are expected to increase from adolescence to adulthood (Luyckx, Klimstra, Duriez, Van Petegem, & Beyers, 2013). Overall, the majority of longitudinal studies on commitment and exploration indicated identity maturation between adolescence and adulthood (see Meeus, 2016). However, longitudinal studies focusing specifically on adolescence have resulted in mixed findings on mean-level trends of the commitment and exploration processes across several years.

Regarding commitment, previous findings showed mean-level stability (Crocetti, Klimstra, Hale, Koot, & Meeus, 2013; Klimstra, Hale, Raaijmakers, Branje, & Meeus, 2010) or increases in adolescence (Luyckx, Teppers, Klimstra, & Rassart, 2014). Possibly, average commitment strength was found to remain stable in early and middle adolescence because the process of constructing commitments involves letting go and revising old commitments, such that although change is occurring, it results in mean-level stability. This view fits with previous findings: Studies focused on younger samples all found evidence for mean-level stability (Crocetti et al., 2013; Klimstra et al., 2010). Therefore, it was examined in the current study whether the average stability of commitment strength could be replicated in middle adolescence.

Previous findings on the mean-level developments of the exploration processes in adolescence have been very mixed (Crocetti et al., 2013; Klimstra et al., 2010;

Luyckx et al., 2014). Moreover, it is hard to determine what the findings indicate for the three exploration processes separately, because part of the studies focused on a type of exploration (i.e., reconsideration) that likely consists of exploration in breadth and ruminative exploration (Crocetti et al., 2013; Klimstra et al., 2010). Overall, previous findings mostly indicated either mean-level stability or increases in the three exploration processes in middle adolescence. In line with the idea that identity formation becomes a highly salient task in adolescence, it was expected that previous findings which indicated increases in the three types of exploration in middle adolescence could be replicated.

THE CURRENT STUDY

In Study 2, it was examined whether commitment strength (i.e., commitment making and identification with commitment) remained stable and exploration (i.e., in breadth, in depth, and ruminative) increased on average across middle adolescence. Furthermore, it was examined, as formulated before, whether characteristics of adolescents' narratives were predictive of developments in the dual-cycle processes. Hypotheses were based on the ideas that making self-event connections is a means of identity formation and that being able to rely on agentic critical event narratives stimulates more adaptive commitment formation and evaluation. Therefore, it was examined whether the presence of self-event connections predicted a more positive increase in commitment strength, and explored whether self-event connections were predictive of changes in the exploration processes. Moreover, it was examined whether a higher degree of agency predicted a more positive increase in commitment strength and adaptive exploration (i.e., increases in exploration in breadth and in depth and decreases in ruminative exploration).

METHOD

Participants and Procedure

Study 2 focused on a subsample of adolescents included in Study 1. One year after the first wave (T1), adolescents could decide to take part in the longitudinal part of Project-Me, which currently consists of two additional waves (T2 and T3). T2 and T3 took place about one and two years after participants' T1 participation in 2015 and 2016, respectively. Parents were asked to provide consent for their child's participation in the longitudinal study. They were contacted by asking participants via e-mail to provide parents' e-mail addresses and by sending out letters via the school if possible. Adolescents and parents who did not respond at T2 were again approached for the data collection of T3. During T2 and T3, adolescents completed the online questionnaire at home and received a small financial compensation of at

least €5 for participation and were entered into a lottery to win €50. From the 1,891 adolescents who finished the measures of interest at T1, 270 completed the DIDS at T2 and/or T3.

Yet, 28 of these adolescents had not written a turning point narrative at T1. Adolescents who wrote a narrative at T1 scored significantly higher on exploration in depth at all three waves, *p*s ≤ .044, *d*s = .43 - .66. Moreover, adolescents who wrote a narrative at T1 scored higher on exploration in breadth at T2 and T3, *p*s ≤ .040, *d*s = .48 - .59, and higher on commitment making at T3, $p = .034$, $d = .55$. Descriptive statistics and results on comparisons between adolescents with and without a turning point narrative are presented in Table S4.2 in the supplemental materials.

Study 2's analyses focused on the 242 adolescents who wrote a turning point narrative at T1 and participated at T2 and/or T3. Compared to adolescents who only participated at T1 (i.e., Study 1), adolescents in the longitudinal sample (i.e., Study 2) were more often enrolled in the highest educational level and less often in the lower or medium educational levels, $\chi^2(2) = 69.38$, $p < .001$, Cramer's V = .21, and were more often female, $\chi^2(1) = 3.88$, $p = .049$, $\varphi = .05$. Moreover, these adolescents scored higher on agency within their turning point narratives than unselected participants, $t(1578) = 3.79$, $p < .001$, $d = .27$, and more often made a self-event connection, $\chi^2(1) = 16.76$, $p < .001$, $\varphi = .10$. Adolescents only included in Study 1 did not differ significantly from those included in Study 2 in age and the commitment and exploration processes, $p \geq .086$.

Adolescents (62.0% female) in the Study 2 sample were on average 14.7 years at T1 (*SD* = 0.7, range = 13.0 – 16.7). At T1, they were enrolled in the lower (7.0%), medium (25.2%), or higher (67.8%) educational level. The majority (95.0%) identified themselves as ethnically Dutch. Adolescents had completed the DIDS at T2 (72.3%) and/or at T3 (68.2%). Little's (1988) Missing Completely at Random (MCAR) test on the study variables was not significant, $\chi^2(22) = 11.39$, $p = .969$, indicating that missing values in the DIDS at T2 or T3 occurred completely at random. Participants with missing data were included in Mplus 7 using Full Information Maximum Likelihood (FIML; Muthén & Muthén, 1998-2015).

Measures

Like Study 1, Study 2 focused on the measurements of the DIDS and adolescents' turning point narratives at T1. In addition, Study 2 focused on measurements of the DIDS at T2 (αs = .77 – .94) and T3 (αs = .79 – .95). Prior to examining the longitudinal development in the mean-levels of commitment and exploration, longitudinal measurement invariance of the dual-cycle processes was examined (Widaman, Ferrer, & Conger, 2010). Longitudinal Confirmatory Factor Analysis models estimated in Mplus 7 (Muthén & Muthén, 1998-2015) showed

evidence for scalar invariance across the three waves for all five processes. Scalar invariance refers to similarity of the construct (invariant factor loadings) as well as similarity of the levels of the underlying items (invariant intercepts) across time (Van de Schoot, Lugtig, & Hox, 2012). Moreover, for the models of commitment making, identification with commitment, and ruminative exploration, strict invariance was found, and for the models of exploration in breadth and in depth partial strict invariance was found. These findings thus indicated that it was appropriate to create the composite mean scores of the Dutch DIDS subscales to examine developmental trends across middle adolescence (Steinmetz, 2013), and fit with previous findings on the Greek version of the DIDS (Mastrotheodoros & Motti-Stefanidi, 2017). Full information on the tests of longitudinal measurement invariance is available in the supplemental materials (see Table S4.3).

Strategy of Analysis

First, changes in mean-levels of the dual-cycle processes across the three waves were examined with Latent Growth Curve (LGC) modeling in Mplus 7 (Muthén & Muthén, 1998-2015) with a Robust Maximum Likelihood estimator (MLR; Satorra & Bentler, 2001). Based on individuals' growth trajectories, LGC modeling estimates a mean level (intercept) and the mean change rate (slope). To take individual differences in the time between waves into account, latent growth curves were estimated based on the exact time of each of the waves using the TSCORES option (Coulombe, Selig, & Delaney, 2016). Thus, intercepts reflect the estimated level of a process at T1 and slopes reflect changes across one year. The latent growth curves for all five processes were estimated in one model in order to appropriately handle the missing data using FIML. The model included associations between the five intercepts and between the five slopes. Next, it was tested whether self-event connections and agency predicted changes in the dual-cycle processes over time by alternately including them as predictors of the intercepts and slopes. In predicting the slopes, participants' starting points on the specific processes were added as control variables (i.e., each slope was regressed on the corresponding intercept). Lastly, it was checked whether adding narrative length as predictor of the intercepts and slopes altered the findings.

RESULTS

Descriptive Statistics

Of the adolescents in Study 2, 57.4% made at least one self-event connection in their turning point narrative at T1. Adolescents' mean agency score was 2.49 (SD = 0.89). Making a self-event connection was associated with higher narrative agency (M = 2.75, SD = 0.82) than not making a connection (M = 2.14, SD = 0.85), $t(240)$ =

5.68, $p < .001$, $d = .74$. Narratives with a self-event connection were significantly longer, $t(240) = 3.01$, $p = .003$, $d = .39$. Agency was also positively associated with narrative length, $r = .15$, $p = .018$. Descriptive statistics of the dual-cycle processes across the three waves are presented in Table 4.3. Associations between self-event connection and agency at T1 and the dual-cycle processes across the three waves are shown in Tables S4.4 and S4.5 in the supplemental materials.

Mean-Level Changes in Dual-Cycle Processes

Results of the LGC model (see Table 4.3) showed that, as predicted, the mean-levels of commitment making and identification with commitment did not significantly change over time. In contrast, and as predicted, the mean-levels of exploration in breadth, exploration in depth, and ruminative exploration all increased significantly across the two years. Moreover, findings showed significant variance between adolescents in the slopes of all five dual-cycle processes, indicating that the development of these processes over time differed significantly between adolescents.

Prior to testing predictive effects of the narrative characteristics, each slope was regressed on the corresponding intercept. The relatively lower Akaike's Information Criterion (AIC) and Bayesian Information Criterion (BIC) indicated that this model (AIC = 5656, BIC = 5865) fitted the data better than alternative models (Byrne, 2013) without these regression coefficients (AIC = 5709, BIC = 5901) or with correlations instead of regression coefficients (AIC = 5717, BIC = 5926). Intercepts were significantly negatively related to the slopes (see Figure 4.1), indicating that adolescents who scored higher on a specific dual-cycle process increased less in this specific process over time compared to those who scored lower on this process. By including these moderate to strong negative associations, other predictions on the slopes were controlled for individual differences in the possibility to increase in commitment strength and exploration.

Table 4.3 | Descriptive Statistics and Results of the Latent Growth Curve Model of the Dual-Cycle Processes in Study 2

	Descriptive Statistics			Growth factors			
	T1	T2	T3	Intercept		Slope	
	M (*SD*)	*M* (*SD*)	*M* (*SD*)	*M*	σ2	*M*	σ2
Commitment making	3.48 (0.89)	3.45 (1.00)	3.50 (0.97)	3.47***	0.57***	0.01	0.15***
Identification with commitment	3.65 (0.73)	3.62 (0.73)	3.56 (0.76)	3.65***	0.35***	-0.04	0.11***
Exploration in breadth	3.42 (0.76)	3.64 (0.72)	3.61 (0.68)	3.44***	0.30***	0.10***	0.04**
Exploration in depth	3.27 (0.69)	3.41 (0.73)	3.46 (0.70)	3.27***	0.23***	0.10***	0.08***
Ruminative exploration	2.53 (0.77)	2.71 (0.80)	2.81 (0.93)	2.53***	0.34***	0.15***	0.08***

Note. A Latent Growth Curve Model on a sample that included also the 28 adolescents that participated in the longitudinal part of the study but did not write a turning point narrative at T1 resulted in the same findings.
** $p < .01$. *** $p < .001$.

Predicting Individual Changes in Commitment and Exploration

Next, self-event connections and agency were alternately added to the LGC model as predictors of the intercepts and slopes of the commitment and exploration processes. Because controlling for narrative length did not alter the findings, the uncontrolled findings are reported (see Figure 4.1 and Supplemental Tables 4.6 and 4.7). Narrative length only had a borderline significant association with the intercept of exploration in breadth, $\beta = .14$, $p = .050$, and was not associated with any of the other intercepts or with any of the slopes, $p \geq .104$.

Whether or not adolescents' turning point narratives contained a self-event connection at T1 was not a significant predictor of any of the intercepts or slopes of the commitment and exploration processes. Agency was not significantly associated with any of the intercepts of the commitment and exploration processes, or with the slopes of commitment making and ruminative exploration. However, a higher degree of agency at T1 did predict a significantly more positive slope of identification with commitment, $\beta = .14$, $p = .022$, exploration in breadth, $\beta = .19$, $p = .027$, and exploration in depth, $\beta = .19$, $p = .009$. This shows that adolescents who expressed more agency in their turning point narrative increased more in identification with commitment, exploration in breadth, and exploration in depth over time, relative to adolescents who expressed less agency.

Sensitivity Analyses

To examine the robustness of the findings on the predictive effects of narrative characteristics on dual-cycle processes it was tested whether making alternative decisions in the strategy of analysis would affect the results. First, repeating the LGC analysis with a variable containing the number of made self-event connections instead of a dichotomous variable showed again that self-event connections were not significantly associated with the intercepts and slopes of the dual-cycle processes, $p \geq .283$. Second, it was tested whether excluding participants with a neutral score on agency (i.e., 2) because of a lack of information on agency would alter the findings. Repeating the LGC analyses on the predictive effects of agency in this subsample ($n = 164$) showed that this time agency failed to significantly predict the slopes of identification with commitment, $\beta = .13$, $p = .070$, and exploration in depth, $\beta = .14$, $p = .065$. Yet, agency was still significantly associated with the slope of exploration in breadth, $\beta = .26$, $p = .012$. Moreover, agency was still not a significant predictor of the slopes of commitment making and ruminative exploration or the intercepts of the five dual-cycle processes, $p \geq .120$.

Lastly, it was checked whether treating the missing turning point narratives as missing at random and applying multiple imputation (i.e., missing information on

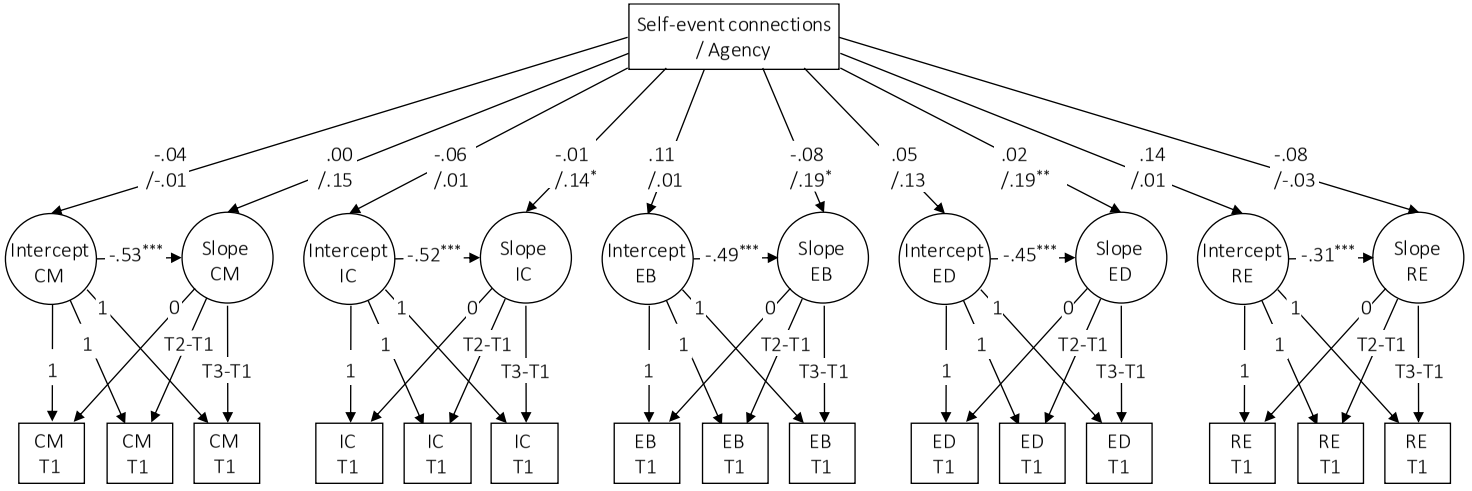

Figure 4.1 | Results from two latent growth curve models with either self-event connections or agency included as predictor of the intercepts and slopes of the commitment and exploration processes in Study 2. CM = Commitment making; IC = Identification with commitment; EB = Exploration in breadth; ED = Exploration in depth; RE = Ruminative exploration. Correlations between the five intercepts and correlations between the five slopes are not shown, but were included in the tested models. Coefficients before the slash indicate predictions by self-event connections. Coefficients after the slash represent predictions by agency. Numbers are standardized regression coefficients representing the difference in y in y standard deviation units for a standard deviation change in x (i.e., StdYX). For the binary self-event connection variable the standardized estimates representing the difference in y in y standard deviation units between no or at least one self-event connection (i.e., StdY) are -.07, -.13, .23, .10, and .29 for the intercepts and .00, -.02, -.17, .05, and -.16 for the slopes of CM, IC, EB, ED, and RE, respectively. Unstandardized estimates, standard errors, and *p*s are displayed in Supplemental Tables 6 and 7.
* $p < .05$. ** $p < .01$. *** $p < .001$.

self-event connection and agency was imputed based on age, gender, educational level, and the dual-cycle processes) would alter the findings. In order to apply multiple imputation, LGC models were estimated based on fixed one-year intervals instead of individually-varying times of T2 and T3. This specific change resulted in a predictive effect of agency on the slope of commitment making that was on the borderline of significance, $\beta = .16$, $p = .050$, but no other changes. The findings based on multiple imputation showed that agency significantly positively predicted the slope of commitment making, $\beta = .16$, $p = .038$, but failed to significantly predict the slope of exploration in breadth, $\beta = .19$, $p = .155$, in contrast to the present study's main findings. Other findings remained the same. Agency significantly predicted the slopes of identification with commitment, $\beta = .18$, $p = .017$, and exploration in depth, $\beta = .24$, $p = .020$, but not ruminative exploration or any of the intercepts, $p \geq .138$. Self-event connections was not significantly associated with any of the intercepts or slopes of the dual-cycle processes, $p \geq .158$.

Overall, these findings demonstrate that narrative agency was also in alternative analyses significantly predictive of developments in the dual-cycle processes, yet the specific dual-cycle process in which agency predicted developments was not consistent. Because these alternative analyses are considered suboptimal (i.e., decreases in power and treating not randomly missing variables as randomly missing) their findings regarding specific associations are likely less reliable than the main analyses. Yet, they do show the importance of future replications of the predictive effects of agency on developments in the dual-cycle processes.

Summary of Findings

The findings indicated that on average commitment strength remained stable in middle adolescence, while all three exploration processes increased. The concurrent associations of self-event connections and agency with the dual-cycle processes as shown in the large cross-sectional sample of Study 1 could not be replicated in the smaller subsample of Study 2. This was likely caused by a lack of power to detect small associations. That is, although a sample size of 242 provides sufficient power (i.e., .80) to find associations (i.e., correlations) of .18 and stronger, this sample size is insufficient to find smaller effects (e.g., power = .34 when $r = .10$, $\alpha = .05$, two-tailed; Faul, Erdfelder, Lang, & Buchner, 2007). Although the presence of self-event connections was not predictive of individual differences in developments of the dual-cycle processes, agency was. Adolescents who expressed more agency in their narrative not only showed slightly more identification with commitment and exploration in depth concurrently (i.e., Study 1), but also increased more in these dual-cycle processes over time. This positive prospective effect was

also apparent for exploration in breadth. These findings show that narratives' motivational theme can foretell developments in the dual-cycle processes.

DISCUSSION

The narrative and the dual-cycle approach are two commonly used approaches to study identity formation. Although both approaches originated from Erikson's writings and are thought to be complementary (McLean & Pasupathi, 2012), their empirical links have rarely been examined in adolescence and across time. This is unfortunate because knowledge on their links could provide information on the degree to which the approaches overlap and on how both approaches can inform each other. In the present research, concurrent and prospective links between key dimensions of both approaches were examined in adolescence.

Overall, the current findings show that the narrative characteristics of making a self-event connection and agency are concurrently positively associated with commitment strength and more adaptive exploration. Yet, these associations were small. In addition, the degree of agency in adolescents' narratives foretold future developments of the dual-cycle processes. Specifically, narrating about oneself as agentic predicted increases in identification with commitment and the more adaptive exploration processes of exploring in breadth and in depth.

Mean-Level Developmental Trends of Dual-Cycle Processes

When examining how narrative characteristics are linked to and predictive of adolescents' commitment and exploration, it is important to realize what the average developmental trends of these processes are. The finding that commitment strength remained on average stable in middle adolescence replicated most previous findings (Crocetti et al., 2013; Klimstra et al., 2010). Likely, this average stability is caused by interindividual heterogeneity, which was reflected in significant variance between adolescents' slopes and has previously been shown in studies on identity formation trajectories (Meeus, Van de Schoot, Keijsers, & Branje, 2012). Being engaged in identity formation not only involves establishing strong commitments, but also questioning current commitments.

Furthermore, the present findings showed that in middle adolescence, engagement in exploration in breadth, exploration in depth, and ruminative exploration on average increased. Previous findings have been rather mixed, but some also suggested increases (Crocetti et al., 2013; Klimstra et al., 2010; Luyckx et al., 2014). The present findings are consistent with the existing ideas within the dual-cycle approach (e.g., Luyckx et al., 2013) and narrative approach (e.g., Habermas & Reese, 2015) that identity is a salient task in adolescence, in which adolescents generally increasingly engage.

Although not exactly in line with how the processes are presented in the dual-cycle model by Luyckx et al. (2006), the findings on average stability of commitment strength and increases in exploration do fit with the general idea of dual-cycle models that identity development generally starts with a phase of exploring possibilities (i.e., identity formation; Crocetti et al., 2008; Luyckx et al., 2006). Adolescents examine which possibilities exist, including the ones they currently have in mind. This likely precedes a phase in which made commitments are strengthened (i.e., identity evaluation). Nevertheless, adolescents differed in how the five processes changed over time, which further emphasized that it is worthwhile to examine different trajectories (Meeus et al., 2012) and how individual variations in developments of the commitment and exploration processes can be predicted.

Integrating Narrative and Dual-Cycle Model Approaches

Self-event connections and the dual-cycle model. Overall, the findings indicated that autobiographical reasoning was positively related to adaptive processes of the dual-cycle model. Specifically, adolescents who made a self-event connection were more strongly committed and explored more in breadth and in depth, but did not engage more in ruminative exploration. Yet, the significant associations with the dual-cycle processes were small and (likely because of this) non-significant when re-examined in the smaller subsample of Study 2. Moreover, making self-event connections was not predictive of increases in commitment strength. The present findings thus showed that the processes of narrating a coherent life story and pursuing strong commitments are linked, but that information from each of the approaches provides complementary knowledge on adolescents' identity formation.

Although making self-event connections and the formation and evaluation of identity commitments are both focused on how individuals establish a sense of personal continuity, both approaches primarily focus on a different element of this personal continuity. That is, whereas self-event connections mostly provide personal continuity between the past and the present (e.g., flunking a grade has made one more conscientious at school), commitments mostly provide personal continuity between the present and the future (e.g., the commitment to becoming a teacher provides current certainty about one's future self; McLean & Pasupathi, 2012). Therefore, individuals who have constructed self-event connections as well as strong commitments might experience most personal continuity.

Furthermore, in addition to indicating engagement in the construction of a coherent narrative identity, the presence of a self-event connection reflects an ability to construct these connections (McLean et al., 2019). In contrast, a high degree of identity exploration in breadth and in depth indicates engagement in

relatively adaptive exploration types, but not whether this has led to meaningful outcomes. This difference in emphasis on the outcome between the two processes could explain the small associations between them in the present study on adolescents and previous studies among young adults (McLean & Pratt, 2006; McLean et al., 2016; Merrill et al., 2016). In light of these findings, future studies could test whether the dual-cycle exploration processes are more strongly linked to narrative characteristics that focus more specifically on engagement in autobiographical reasoning, such as the presence of exploratory processing as used in adult samples (Pals, 2006).

Moreover, the differences in the methodologies of the narrative and dual-cycle approach could explain the small associations. In the narrative approach, adolescents report narratives, which are coded for autobiographical reasoning by others (i.e., trained coders). In contrast, in the dual-cycle approach adolescents report their own view on the extent to which they engage in a process. These differences in methods could, by themselves, account for the small association. For example, it is possible that adolescents who often engage in connecting events to their self-concept, without having to put a lot of effort in this, do not view themselves as highly engaged in identity exploration. Alternatively, it is possible that there is less effort put into reporting processes on a scale, than in autobiographical narrating and people report that they are more engaged in such processes than they actually are. The small associations between self-event connections and the dual-cycle processes could thus reflect differences in the methodologies of the two approaches.

Agency and the dual-cycle model. It was hypothesized that viewing oneself as agentic and being able to rely on critical event narratives in which the self was agentic would stimulate adaptive formation and evaluation of commitments. The present findings confirmed this, as a higher degree of agency in adolescents' narratives was significantly, but weakly, related to being more strongly committed and engaging more in exploration in depth. Consistent with their small effect size, these associations disappeared when re-examined in the smaller subsample of Study 2. A possible explanation for the small associations between narrative agency and commitment strength and exploration in depth is that adolescents develop their identity within a socio-cultural context. While some adolescents might receive a lot of support and opportunities for identity development, others might be confronted with contextual barriers (Yoder, 2000). Consequently, even adolescents who describe themselves as highly agentic within their autobiographical stories might not be able to commit to the identity options of their choice. Such contextual factors might reduce the strength of associations between narrative agency and the dual-cycle processes. In addition, it might take time for narrative agency to affect adolescents' dual-cycle processes.

The longitudinal findings showed that adolescents who expressed more agency in their narrative did increase more in identification with commitment, exploration in breadth, and exploration in depth over time, compared to adolescents who lacked this narrative agency. This suggests that believing that one is agentic and being able to rely on critical event narratives in which one is agentic stimulates adolescents to commit to options that they see fit them best and might encourage the more normative trajectory of exploration in adolescence. These findings, if replicated, might indicate a promising way to promote the formation of strong commitments and adaptive identity exploration among adolescents, as previous findings showed that agency as displayed in personal narratives can be increased through interventions (Adler, 2012).

No narrative and the dual-cycle model. While executing the present research, it was evident that a particular group of adolescents did not narrate a turning point. Most interestingly, these adolescents had slightly weaker commitments and engaged slightly less in all three exploration processes compared to adolescents who did narrate a turning point. Moreover, the small sample of adolescents who did not narrate a turning point in the longitudinal subsample later engaged consistently relatively less in exploration in breadth and in depth, and reported two years later significantly lower commitment making. Although adolescents who did not narrate a turning point might have different reasons for this, reluctance or inability to share an autobiographical story does seem to indicate less engagement in the formation and evaluation of identity commitments. This fits with the idea that engaging in autobiographical narration is a way of exploring identity commitments (McLean & Pasupathi, 2012), and underscores that the two identity formation approaches are linked.

That said, the lack of information on autobiographical narrating by these adolescents likely suppressed the associations between narrative characteristics and the dual-cycle processes. For instance, some of the adolescents who did not share a turning point might have been unable to come up with such a narrative and were thus unable to make a self-event connection. Thus, part of the associations between autobiographical reasoning and the dual-cycle processes might have been evident in the lower commitment and exploration scores of adolescents without a narrative, resulting in weaker associations between self-event connections and commitment strength and exploration.

One could argue that this type of missing data is specific for written narratives, because here no researcher is present to encourage narration. Yet, it is likely that adolescents who did not *want* to write down a turning point narrative also would not want to participate in a life story interview. Nevertheless, when collecting written narratives, it remains unclear how different reasons for not sharing a

turning point are related to the dual-cycle processes. In the current study, a large subgroup of adolescents did not provide information on why they did not narrate. Therefore, it is recommended that future studies add follow-up questions after the narrative prompt on why adolescents might not write a narrative and examine their engagement in the commitment and exploration processes concurrently and over time.

Strengths and Limitations

Strengths of the present research were the combined use of a large cross-sectional sample (Study 1) and a longitudinal subsample (Study 2). The large cross-sectional sample made it possible to detect even small associations between the two identity formation approaches. The longitudinal subsample made it possible to examine whether both approaches were also linked when predicting adolescents' developments in commitment and exploration. Another strength was the use of two different methods to study identity formation: a self-report questionnaire and coded narrative data. This reduces the chance that associations were resulting from shared measurement error.

There were, however, also limitations that need to be acknowledged. First, the longitudinal subsample in Study 2 was relatively small and not completely representative of the larger sample from which it was derived. Adolescents in the subsample made more often a self-event connection and expressed more agency. Yet, these differences were small and the subsample differed not significantly in the dual-cycle processes, indicating that biases might be relatively minor. Nevertheless, because of these limitations it is especially important for future research to test whether the present longitudinal findings can be replicated.

Second, the present research focused on the characteristics of one autobiographical narrative. Previous findings showed high intra-individual variability in the characteristics of different types of narratives (McLean et al., 2016). Choosing an appropriate narrative prompt is thus important. Turning point prompts are known to elicit self-event connections (McLean et al., 2010) and were thus deemed appropriate for the present research. Yet, assessing the characteristics in future studies across multiple narratives or a full life story interview (McAdams, 2008) might be more reliable and could result in stronger associations with the dual-cycle processes.

Third, the present research focused on prospective effects between the narrative and the dual-cycle approach, but only in one direction. Another possible way of linking the two approaches would be to examine whether the dual-cycle processes are predictive of developments in autobiographical narration. Apart from the fit of the examined direction with the literature (McLean & Pasupathi, 2012),

prospective effects in this other direction were not examined in the present research because of insufficient data. That is, the not at random missing data on the turning point narratives would make it difficult to accurately estimate changes in the narrative characteristics. Future research could take this into account during data collection, for example by collecting more measurement waves, and examine whether adolescents' engagement in the dual-cycle processes predicts changes in the characteristics of their autobiographical narratives over time.

Fourth, it should be pointed out that the present research focused on middle adolescence. Although this was rather novel and adolescence is a key period to examine identity formation (Erikson, 1968), the present findings might not generalize to other periods in the human life span. Middle adolescence could be too early to foretell individual differences in the development of commitment strength based on the degree of self-event connections, as a coherent narrative identity takes time to develop (Habermas & Reese, 2015). Future research should examine whether autobiographical reasoning is predictive of developments in commitment and exploration in other age periods, such as young adulthood.

Fifth, the present research was limited to adolescents in the Netherlands. This did extend previous studies on links between autobiographical narration and commitment and exploration in other Western cultures (Carlsson et al., 2015; Glavan et al., 2019; McLean & Pratt, 2006; McLean et al., 2016). Yet, young people from non-Western cultures might differ in how they construct their narrative identity (e.g., Reese et al., 2014), which might result in different associations between the two identity formation approaches. Future studies might examine how the two approaches relate to each other in non-Western cultures.

CONCLUSION

The narrative and the dual-cycle approach capture identity formation in two different ways. Although these approaches have been thought to be complementary, their empirical links have only scarcely been investigated. Knowledge on their empirical links in adolescence and across time has been especially lacking. Therefore, the present research examined concurrent and prospective links between key dimensions of both approaches in adolescence. The findings provided support for concurrent links. Adolescents who showed autobiographical reasoning and agency in their autobiographical narrating were more engaged in the commitment and adaptive exploration processes of the dual-cycle model. However, these associations were relatively weak, consistent with previous studies in young adulthood. This indicates that both approaches primarily capture unique aspects of the identity formation process and could thus complement each other. An example of this was the finding that a higher degree of agency in one key autobiographical

narrative foretold a steeper increase in identification with commitments and adaptive exploration in middle adolescence. This shows that by paying attention to adolescents' autobiographical stories one can not only get to know their current narrative identity, but also more accurately foretell their engagement in exploring and strengthening commitments.

SUPPLEMENTAL MATERIALS

Table S4.1 | Descriptive Statistics of the Commitment and Exploration Processes Across Groups of Adolescents Differing in Their Reason for not Writing a Turning Point Narrative (Study 1)

	Commitment making	Identification with commitment	Exploration in breadth	Exploration in depth	Ruminative exploration
	M (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Wrote a narrative	3.39 (0.94)	3.58 (0.72)	3.38 (0.73)	3.20 (0.73)	2.52 (0.79)
No narrative	3.25 (1.03)	3.43 (0.88)	3.11 (0.82)	2.85 (0.80)	2.26 (0.79)
Don't want to share	3.45 (1.12)	3.39 (0.97)	3.30 (0.96)	3.08 (0.83)	2.29 (0.75)
Don't know	3.24 (0.99)	3.47 (0.81)	3.13 (0.73)	2.87 (0.75)	2.29 (0.80)
No clear reason	3.25 (1.10)	3.38 (0.97)	3.04 (0.92)	2.79 (0.87)	2.22 (0.80)

Note. From the adolescents who did not write a turning point narrative (n = 311, 16.4% of total sample), 16 stated that they did not want to share one, 184 stated that they could not think of a turning point event, and 111 did not provide a clear reason. Adolescents were not asked to provide a reason when they did not write a turning point narrative.

Table S4.2 | Descriptive Statistics for Adolescents in the Longitudinal Sample without a Turning Point Narrative at T1 and Comparisons with the Study 2 Sample (with a Turning Point Narrative at T1)

	T1		T2		T3	
	M (*SD*)	*d*	*M* (*SD*)	*d*	*M* (*SD*)	*d*
Commitment making	3.23 (1.13)	.25	3.32 (1.24)	.12	2.99 (0.89)	.55*
Identification with commitment	3.46 (0.90)	.23	3.31 (0.83)	.40	3.27 (0.65)	.41
Exploration in breadth	3.15 (0.95)	.32	3.27 (0.80)	.48*	3.23 (0.58)	.59*
Exploration in depth	2.81 (0.68)	.66**	3.04 (0.96)	.43*	3.00 (0.71)	.65**
Ruminative exploration	2.42 (0.77)	.14	2.84 (0.72)	.17	2.97 (0.82)	.17

Note. Differences between adolescents with (Study 2 sample) and without (descriptive statistics shown here) a turning point narrative at T1 in the five identity processes across time were tested with *t*-tests. For the comparisons at T1, T2, and T3 the *n* of adolescents without a turning point narrative at T1 was 28, 19, and 18, respectively. If significant, adolescents without a turning point narrative at T1 scored lower (see Table 4.3).

* $p < .05$. ** $p < .01$.

Measurement Invariance

Longitudinal measurement invariance of the DIDS subscales was tested following steps described by Widaman et al. (2010). A series of longitudinal Confirmatory Factor Analysis (CFA) models was estimated in Mplus 7 (Muthén & Muthén, 1998-2015). Each dual-cycle process was tested separately. For reasons of slightly non-normally distributed variables, a Full Information Robust Maximum Likelihood estimator (MLR) was used (Satorra & Bentler, 2001). Model fit was considered to be acceptable when the Comparative Fit Index (CFI) was above 0.90 and the Root Mean Square Error of Approximation (RMSEA) was below 0.08 (Byrne, 2013). A significant reduction in model fit was concluded if two of the following three criteria were met: $\Delta\chi^2_{SB}$ significant at < .050, ΔCFI < -.010, and ΔRMSEA > .015 (Chen, 2007; Cheung & Rensvold, 2002).

First, it was examined whether a longitudinal Confirmatory Factor Analysis (CFA) model fitted the data sufficiently (Widaman et al., 2010). A sufficient model fit would indicate configural invariance, which refers to the validity of the same CFA at every wave (Van de Schoot et al., 2012). In addition to CFA models for one of the identity processes at all three waves, longitudinal CFA models contained covariances between the latent variables and between the residuals of like items across the waves. Only the model for exploration in breadth did not fit the data well, χ^2_{SB} (72) = 421.88, p < .001, CFI = .68, RMSEA = .14. The Modification Indices indicated that the residuals of the items "I am considering a number of different lifestyles that might suit me" and "I am thinking about different lifestyles that might be good for me" were correlated within every wave. Correlating the residuals of these items was deemed reasonable, as these items were more alike than others. Including these correlations resulted in an acceptable model fit for the model of exploration in breadth. The fit statistics of all models are displayed in Table S4.3.

Second, metric invariance was tested by constraining all factor loadings of like items to be equal across time. For none of the identity processes this resulted in a significantly worse model fit (see Table S4.3). Third, scalar invariance was tested by also constraining all intercepts of like items to be equal across time. Again, this did not result in a significantly worse model fit for any of the commitment and exploration processes (see Table S4.3). Moreover, all final models in which factor loadings and intercepts of like items were constrained to be equal across time had a sufficient model fit.

Lastly, it was checked whether constraining strict invariance would decrease the model fit by constraining the residuals of corresponding items to be time invariant. Adding these constraints did not significantly worsen the model fit for the model of commitment making, identification with commitment, and ruminative

exploration (see Table S4.3). However, the model fit for the model of exploration in breadth, $\Delta\chi^2_{SB}$ (10) = 22.09, p = .015, ΔCFI = -.011, ΔRMSEA = .000, and exploration in depth, $\Delta\chi^2_{SB}$ (10) = 25.09, p = .005, ΔCFI = -.021, ΔRMSEA = .007, became significantly worse. Next, it was checked for both models for which item constraining the residuals resulted in the biggest decrease in model fit, and subsequently which wave resulted in the biggest decrease in model fit. Based on these findings, a model was tested in which the residuals of four items were constrained across time and the residual of one item was constrained across two waves. The residual of this latter item was freely estimated at one wave. For exploration in breadth this was the item "I think about different goals that I might pursue" at T3. For exploration in depth this was the item "I think about whether the aims I already have for life really suit me" at T2. These models with partial strict invariance did not fit significantly worse than the models with scalar invariance (see Table S4.3).

Table S4.3 | Model Fit of Longitudinal CFA Models, Used to Test Longitudinal Measurement Invariance (Study 2)

		Model fit					Change in model fit [a]				
Identity process	Model	χ^2_{SB}	*df*	*p*	CFI	RMSEA	$\Delta\chi^2_{SB}$	*df*	*p*	ΔCFI	ΔRMSEA
Commitment making	1. Configural invariance	103.40	72	.009	.982	.042					
	2. Metric invariance	111.57	80	.011	.982	.040	6.44	8	.598	.000	-.002
	3. Scalar invariance	120.83	88	.012	.981	.039	8.87	8	.353	-.001	-.001
	4. Strict invariance	149.07	98	.001	.971	.046	22.65	10	.012	-.010	.007
Identification with commitment	1. Configural invariance	179.78	72	< .001	.924	.079					
	2. Metric invariance	192.24	80	< .001	.921	.076	12.64	8	.125	-.003	-.003
	3. Scalar invariance	202.49	88	< .001	.919	.073	9.29	8	.318	-.002	-.003
	4. Strict invariance	218.88	98	< .001	.915	.071	16.69	10	.082	-.004	-.002
Exploration in breadth	1. Configural invariance [b]	155.27	69	< .001	.921	.072					
	2. Metric invariance	163.16	77	< .001	.921	.068	7.28	8	.507	.000	-.004
	3. Scalar invariance	176.43	85	< .001	.916	.067	12.87	8	.116	-.005	-.001
	4. Partial strict invariance	192.37	94	< .001	.910	.066	16.30	9	.061	-.006	-.001
Exploration in depth	1. Configural invariance	98.18	72	.022	.967	.039					
	2. Metric invariance	102.48	80	.046	.972	.034	4.75	8	.784	.005	-.005
	3. Scalar invariance	117.45	88	.020	.963	.037	15.61	8	.048	-.009	.003
	4. Partial strict invariance	132.74	97	.009	.955	.039	14.96	9	.092	-.008	.002
Ruminative exploration	1. Configural invariance	124.08	72	< .001	.937	.055					
	2. Metric invariance	132.66	80	< .001	.937	.052	7.48	8	.486	.000	-.003
	3. Scalar invariance	140.31	88	< .001	.937	.050	6.65	8	.575	.000	-.002
	4. Strict invariance	153.47	98	< .001	.933	.048	13.23	10	.211	-.004	-.002

Note. [a] The change in model fit refers to a comparison with the model in the previous line.

[b] The model of exploration in breadth included correlations between the residuals of two pairs of items within every wave, as described in the text.

Table S4.4 | Comparisons between Adolescents With and Without a Self-event Connection at T1 in the Commitment and Exploration Processes Across the Three Waves (Study 2)

Self-event connection T1:	DIDS T1			DIDS T2			DIDS T3		
	Yes	No		Yes	No		Yes	No	
	M (*SD*)	*M* (*SD*)	*d*	*M* (*SD*)	*M* (*SD*)	*d*	*M* (*SD*)	*M* (*SD*)	*d*
Commitment making	3.46 (0.90)	3.51 (0.88)	.06	3.38 (1.03)	3.54 (0.94)	.16	3.55 (1.00)	3.43 (0.94)	.11
Identification with commitment	3.61 (0.74)	3.70 (0.71)	.13	3.60 (0.71)	3.65 (0.76)	.06	3.56 (0.79)	3.55 (0.71)	.01
Exploration in breadth	3.48 (0.72)	3.34 (0.81)	.19	3.67 (0.71)	3.59 (0.74)	.11	3.60 (0.70)	3.62 (0.66)	.03
Exploration in depth	3.29 (0.72)	3.24 (0.65)	.07	3.45 (0.72)	3.36 (0.75)	.12	3.49 (0.75)	3.42 (0.61)	.10
Ruminative exploration	2.60 (0.76)	2.43 (0.77)	.23	2.77 (0.78)	2.64 (0.82)	.15	2.77 (0.94)	2.88 (0.92)	.11

Note. DIDS = Dimensions of Identity Development Scale. Differences between the two groups were tested with *t*-tests, but were not significant, $p \geq .079$.

Table S4.5 | Correlations between Agency at T1 and the Commitment and Exploration Processes across the Three Waves (Study 2)

	Agency T1		
	DIDS T1	DIDS T2	DIDS T3
Commitment making	.00	.04	.13
Identification with commitment	.02	.06	.15*
Exploration in breadth	.01	.13	.13
Exploration in depth	.10	.19*	.19*
Ruminative exploration	.01	.02	.00

Note. DIDS = Dimensions of Identity Development Scale.
* $p < .05$.

Table S4.6 | Results of the Latent Growth Curve Model with Self-event Connection as Predictor of the Dual-Cycle Processes' Growth Factors (Study 2)

	Intercepts																			
	Commitment making				Identification with commitment				Exploration in breadth				Exploration in depth				Ruminative exploration			
Independent variable	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β
Self-event connection	-.06	.592	.12	-.04	-.09	.365	.09	-.06	.15	.138	.10	.11	.05	.554	.09	.05	.18	.069	.10	.14
	Slopes																			
	Commitment making				Identification with commitment				Exploration in breadth				Exploration in depth				Ruminative exploration			
	b	*p*	*SE*	β	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β
Self-event connection	.00	.991	.06	.00	-.01	.899	.05	-.01	-.04	.349	.05	-.08	.01	.769	.05	.02	-.05	.357	.06	-.08

Table S4.7 | Results of the Latent Growth Curve Model with Agency as Predictor of the Dual-Cycle Processes' Growth Factors (Study 2)

	Intercepts																			
	Commitment making				Identification with commitment				Exploration in breadth				Exploration in depth				Ruminative exploration			
Independent variable	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β
Agency	-.01	.930	.06	-.01	.01	.897	.05	.01	.01	.861	.05	.01	.08	.195	.06	.13	.01	.877	.05	.01
	Slopes																			
	Commitment making				Identification with commitment				Exploration in breadth				Exploration in depth				Ruminative exploration			
	b	*p*	*SE*	β	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β	*b*	*p*	*SE*	β
Agency	.07	.056	.04	.15	.06	.022	.03	.14	.06	.027	.03	.19	.06	.009	.02	.19	-.01	.772	.04	-.03

REFERENCES

Adler, J. M. (2012). Living into the story: Agency and coherence in a longitudinal study of narrative identity development and mental health over the course of psychotherapy. *Journal of Personality and Social Psychology, 102*, 367-389. doi:10.1037/a0025289

Adler, J. M., Lodi-Smith, J., Philippe, F. L., & Houle, I. (2016). The incremental validity of narrative identity in predicting well-being: A review of the field and recommendations for the future. *Personality and Social Psychology Review, 20*, 142-175. doi:10.1177/1088868315585068

Adler, J. M., Skalina, L. M., & McAdams, D. P. (2008). The narrative reconstruction of psychotherapy and psychological health. *Psychotherapy Research, 18*, 719-734. doi:10.1080/10503300802326020

Bakan, D. (1966). *The duality of human existence: Isolation and communion in Western man*. Boston, MA: Beacon Press.

Byrne, B. M. (2013). *Structural equation modeling with Mplus: Basic concepts, applications, and programming*. New York, NY: Routledge.

Carlsson, J., Wängqvist, M., & Frisén, A. (2015). Identity development in the late twenties: A never ending story. *Developmental Psychology, 51*, 334-345. doi:10.1037/a0038745

Carlsson, J., Wängqvist, M., & Frisén, A. (2016). Life on hold: Staying in identity diffusion in the late twenties. *Journal of Adolescence, 47*, 220-229. doi:10.1016/j.adolescence.2015.10.023

Centraal Bureau voor de Statistiek. (2016). *Jaarrapport 2016 landelijke jeugdmonitor*. Den Haag, the Netherlands: Centraal Bureau voor de Statistiek.

Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal, 14*, 464-504. doi:10.1080/10705510701301834

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal, 9*, 233-255. doi:10.1207/S15328007SEM0902_5

Côté, J. E. (1997). An empirical test of the identity capital model. *Journal of Adolescence, 20*, 577-597. doi:10.1006/jado.1997.0111

Coulombe, P., Selig, J. P., & Delaney, H. D. (2016). Ignoring individual differences in times of assessment in growth curve modeling. *International Journal of Behavioral Development, 40*, 76-86. doi:10.1177/0165025415577684

Crocetti, E., Klimstra, T. A., Hale, W. W., Koot, H. M., & Meeus, W. (2013). Impact of early adolescent externalizing problem behaviors on identity development in middle to late adolescence: A prospective 7-year longitudinal study. *Journal of Youth and Adolescence, 42*, 1745-1758. doi:10.1007/s10964-013-9924-6

Crocetti, E., Rubini, M., & Meeus, W. (2008). Capturing the dynamics of identity formation in various ethnic groups: Development and validation of a three-dimensional model. *Journal of Adolescence, 31*, 207-222. doi:10.1016/j.adolescence.2007.09.002

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227-268. doi:10.1207/s15327965pli1104_01

Erikson, E. H. (1950). *Childhood and society*. New York, NY: Norton.

Erikson, E. H. (1968). *Identity: Youth and crisis*. New York, NY: Norton.

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*, 175-191. doi:10.3758/BF03193146

Glavan, B., Negru-Subtirica, O., & Benga, O. (2019). The struggle to find meaning: A mixed methodology study on meaning-making and identity. *Emerging Adulthood*. Advance online publication. doi:10.1177/2167696819841760

Habermas, T., & Reese, E. (2015). Getting a life takes time: The development of the life story in adolescence, its precursors and consequences. *Human Development, 58*, 172-201. doi:10.1159/000437245

Klimstra, T. A., Hale, W. W., 3rd, Raaijmakers, Q. A. W., Branje, S., & Meeus, W. (2010). Identity formation in adolescence: Change or stability? *Journal of Youth and Adolescence, 39*, 150-162. doi:10.1007/s10964-009-9401-4

Klimstra, T. A., Luyckx, K., & Meeus, W. H. J. (2012). Personal Identity in Belgium and The Netherlands. *New Directions for Child and Adolescent Development, 2012,* 19-34. doi:10.1002/cad.20020

Köber, C., Schmiedek, F., & Habermas, T. (2015). Characterizing lifespan development of three aspects of coherence in life narratives: A cohort-sequential study. *Developmental Psychology, 51*, 260-275. doi:10.1037/a0038668

Koepke, S., & Denissen, J. J. A. (2012). Dynamics of identity development and separation–individuation in parent–child relationships during adolescence and emerging adulthood: A conceptual integration. *Developmental Review, 32*, 67-88. doi:10.1016/j.dr.2012.01.001

Little, R. J. A. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association, 83*, 1198-1202. doi:10.1080/01621459.1988.10478722

Luyckx, K., Goossens, L., & Soenens, B. (2006). A developmental contextual perspective on identity construction in emerging adulthood: Change dynamics in commitment formation and commitment evaluation. *Developmental Psychology, 42*, 366-380. doi:10.1037/0012-1649.42.2.366

Luyckx, K., Klimstra, T. A., Duriez, B., Van Petegem, S., & Beyers, W. (2013). Personal identity processes from adolescence through the late 20s: Age trends, functionality, and depressive symptoms. *Social Development, 22*, 701-721. doi:10.1111/sode.12027

Luyckx, K., Schwartz, S. J., Berzonsky, M. D., Soenens, B., Vansteenkiste, M., Smits, I., & Goossens, L. (2008). Capturing ruminative exploration: Extending the four-dimensional model of identity formation in late adolescence. *Journal of Research in Personality, 42*, 58-82. doi:10.1016/j.jrp.2007.04.004

Luyckx, K., Teppers, E., Klimstra, T. A., & Rassart, J. (2014). Identity processes and personality traits and types in adolescence: Directionality of effects and developmental trajectories. *Developmental Psychology, 50*, 2144-2153. doi:10.1037/a0037256

Marcia, J. E. (1966). Development and validation of ego-identity status. *Journal of Personality and Social Psychology, 3*, 551-558. doi:10.1037/h0023281

Mastrotheodoros, S., & Motti-Stefanidi, F. (2017). Dimensions of Identity Development Scale (DIDS): A test of longitudinal measurement invariance in Greek adolescents. *European Journal of Developmental Psychology, 14*, 605-617. doi:10.1080/17405629.2016.1241175

McAdams, D. P. (2001). The psychology of life stories. *Review of General Psychology, 5*, 100-122. doi:10.1037/1089-2680.5.2.100

McAdams, D. P. (2008). The Life Story Interview Retrieved from http://www.sesp.northwestern.edu/foley/instruments/interview/

McAdams, D. P., & McLean, K. C. (2013). Narrative identity. *Current Directions in Psychological Science, 22*, 233-238. doi:10.1177/0963721413475622

McLean, K. C., Breen, A. V., & Fournier, M. A. (2010). Constructing the self in early, middle, and late adolescent boys: Narrative identity, individuation, and well-being. *Journal of Research on Adolescence, 20*, 166-187. doi:10.1111/j.1532-7795.2009.00633.x

McLean, K. C., & Jennings, L. E. (2012). Teens telling tales: How maternal and peer audiences support narrative identity development. *Journal of Adolescence, 35*, 1455-1469. doi:10.1016/j.adolescence.2011.12.005

McLean, K. C., & Pasupathi, M. (2011). Old, new, borrowed, blue? The emergence and retention of personal meaning in autobiographical storytelling. *Journal of Personality, 79*, 135-163. doi:10.1111/j.1467-6494.2010.00676.x

McLean, K. C., & Pasupathi, M. (2012). Processes of identity development: Where I am and how I got there. *Identity, 12*, 8-28. doi:10.1080/15283488.2011.632363

McLean, K. C., & Pratt, M. W. (2006). Life's little (and big) lessons: Identity statuses and meaning-making in the turning point narratives of emerging adults. *Developmental Psychology, 42*, 714-722. doi:10.1037/0012-1649.42.4.714

McLean, K. C., & Syed, M. (2015). Personal, master, and alternative narratives: An integrative framework for understanding identity development in context. *Human Development, 58*, 318-349. doi:doi.org/10.1159/000445817

McLean, K. C., Syed, M., Pasupathi, M., Adler, J. M., Dunlop, W. L., Drustrup, D., . . . McCoy, T. (2019). The empirical structure of narrative identity: The initial Big Three. *Journal of Personality and Social Psychology*. Advance online publication. doi:10.1037/pspp0000247

McLean, K. C., Syed, M., & Shucard, H. (2016). Bringing identity content to the fore: Links to identity development processes. *Emerging Adulthood, 4*, 356-364. doi:10.1177/2167696815626820

McLean, K. C., Syed, M., Yoder, A., & Greenhoot, A. F. (2014). The role of domain content in understanding identity development processes. *Journal of Research on Adolescence, 26*, 60-75. doi:10.1111/jora.12169

Meeus, W. (2016). Adolescent psychosocial development: A review of longitudinal models and research. *Developmental Psychology, 52*, 1969-1993. doi:10.1037/dev0000243

Meeus, W., Van de Schoot, R., Keijsers, L., & Branje, S. (2012). Identity statuses as developmental trajectories: A five-wave longitudinal study in early-to-middle and middle-to-late adolescents. *Journal of Youth Adolescence, 41*, 1008-1021. doi:10.1007/s10964-011-9730-y

Merrill, N., Waters, T. E., & Fivush, R. (2016). Connecting the self to traumatic and positive events: Links to identity and well-being. *Memory, 24*, 1321-1328. doi:10.1080/09658211.2015.1104358

Muthén, L. K., & Muthén, B. O. (1998-2015). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.

Negru-Subtirica, O., Tiganasu, A., Dezutter, J., & Luyckx, K. (2017). A cultural take on the links between religiosity, identity, and meaning in life in religious emerging adults. *British Journal of Developmental Psychology, 35*, 106-126. doi:10.1111/bjdp.12169

Pals, J. L. (2006). Narrative identity processing of difficult life experiences: Pathways of personality development and positive self-transformation in adulthood. *Journal of Personality, 74*, 1079-1110. doi:10.1111/j.1467-6494.2006.00403.x

Pasupathi, M., Mansour, E., & Brubaker, J. R. (2007). Developing a life story: Constructing relations between self and experience in autobiographical narratives. *Human Development, 50*, 85-110. doi:10.1159/000100939

Philippe, F. L., Koestner, R., Beaulieu-Pelletier, G., & Lecours, S. (2011). The role of need satisfaction as a distinct and basic psychological component of autobiographical memories: A look at well-being. *Journal of Personality, 79*, 905-938. doi:10.1111/j.1467-6494.2010.00710.x

Reese, E., Chen, Y., McAnally, H. M., Myftari, E., Neha, T., Wang, Q., & Jack, F. (2014). Narratives and traits in personality development among New Zealand Māori, Chinese, and European adolescents. *Journal of Adolescence, 37*, 727-737. doi:10.1016/j.adolescence.2014.02.005

Satorra, A., & Bentler, P. M. (2001). A scaled difference chi-square test statistic for moment structure analysis. *Psychometrika, 66*, 507-514. doi:10.1007/BF02296192

Schwartz, S. J., Côté, J. E., & Arnett, J. J. (2005). Identity and agency in emerging adulthood: Two developmental routes in the individualization process. *Youth and Society, 37*, 201-229. doi:10.1177/0044118X05275965

Steinmetz, H. (2013). Analyzing observed composite differences across groups: Is partial measurement invariance enough? *Methodology, 9*, 1-12. doi:10.1027/1614-2241/a000049

Sutin, A. R., & Robins, R. W. (2005). Continuity and correlates of emotions and motives in self-defining memories. *Journal of Personality, 73*, 793-824. doi:10.1111/j.1467-6494.2005.00329.x

Syed, M., & Nelson, S. C. (2015). Guidelines for establishing reliability when coding narrative data. *Emerging Adulthood, 3*, 1-13. doi:10.1177/2167696815587648

Van de Schoot, R., Lugtig, P., & Hox, J. (2012). A checklist for testing measurement invariance. *European Journal of Developmental Psychology, 9*, 486-492. doi:10.1080/17405629.2012.686740

Van Doeselaar, L., Becht, A. I., Klimstra, T. A., & Meeus, W. H. J. (2018). A review and integration of three key components of identity development: Distinctiveness, coherence, and continuity. *European Psychologist, 23*, 278-288. doi:10.1027/1016-9040/a000334

Van Doeselaar, L., Meeus, W., Koot, H. M., & Branje, S. (2016). The role of best friends in educational identity formation in adolescence. *Journal of Adolescence, 47*, 28-37. doi:10.1016/j.adolescence.2015.12.002

Widaman, K. F., Ferrer, E., & Conger, R. D. (2010). Factorial invariance within longitudinal structural equation models: Measuring the same construct across time. *Child Development Perspectives, 4*, 10-18. doi:10.1111/j.1750-8606.2009.00110.x

Yoder, A. E. (2000). Barriers to ego identity status formation: A contextual qualification of Marcia's identity status paradigm. *Journal of Adolescence, 23*, 95-106. doi:10.1006/jado.1999.0298

CHAPTER 5

The Role of Identity Commitments in Depressive Symptoms and Stressful Life Events in Adolescence and Young Adulthood

Van Doeselaar, L., Klimstra, T. A., Denissen, J. J. A., Branje, S., & Meeus, W. (2018). The role of identity commitments in depressive symptoms and stressful life events in adolescence and young adulthood. *Developmental Psychology*, *54*, 950-962. https://doi.org/10.1037/dev0000479

ABSTRACT

The formation of a stable identity, consisting of a strong set of commitments, is a key developmental task in adolescence and young adulthood. Not resolving this task and lacking strong identity commitments is related to difficulties like depressive symptoms and stressful life events. However, the exact role of identity commitments in these negative experiences has remained unclear. In two longitudinal studies in the Netherlands spanning 8 and 6 years, respectively, we examined the associations between career and interpersonal commitments, depressive symptoms, and the number of experienced stressful life events over time. Study 1 included 683 adolescents (11 to 15 years at T1) and 268 adolescents and young adults (16 to 20 years at T1). Study 2 included 960 adolescents (12 to 17 years at T1) and 944 young adults (18 to 24 years at T1). Both studies indicated that stronger identity commitments predicted relative decreases in negative experiences. In Study 2, stronger interpersonal commitments predicted relative decreases in depressive symptoms. In both studies, stronger career commitments predicted a relative decrease in stressful life events. Furthermore, only career commitments weakened after negative experiences. Interpersonal commitments did not weaken after negative experiences, possibly because of the importance of interpersonal relationships during difficult times. Moreover, identity commitments did not buffer the effect of stressful life events on depressive symptoms in either study. These findings underscore the importance of identity commitments in adolescence and young adulthood, but provide crucial nuances regarding their role in different life domains.

INTRODUCTION

Young people in Western societies are expected to make important choices in various life domains (Arnett, 2000; Erikson, 1968). They have to make several educational and occupational choices, and have to choose friends and a romantic partner. Young people's degree of commitment to these choices forms a central dimension of influential models on identity formation (Crocetti, Rubini, & Meeus, 2008; Luyckx, Goossens, Soenens, & Beyers, 2006; Marcia, 1966). Being strongly committed is defined as having made firm choices in identity-relevant domains, and identifying with these choices. If individuals strongly commit to their choices, the roles that come with these choices are part of their identity. Strongly committed individuals are therefore considered to have a more mature identity (Meeus, Van de Schoot, Keijsers, Schwartz, & Branje, 2010). The formation of a stable identity — consisting of a strong set of commitments — has been referred to as a key developmental task in adolescence and young adulthood (Arnett, 2000; Erikson, 1968).

Many young people are trying to establish a sense of continuity (Erikson, 1968). They are expected to define their own values, beliefs, and goals while retaining their identifications with parents (i.e., convictions directly adopted from their parents). Strong commitments can provide this sense of continuity, as well as a sense of meaning and direction in life. Consequently, strong commitments may contribute to a more positive life course. In line with this, strong commitments tend to go together with various aspects of well-being (Meeus, 2011). However, evidence for concurrent associations does not yet provide much information on how commitments are linked to indicators of well-being during development.

Identity commitments might be linked to well-being in various ways (Klimstra & Denissen, 2017). For example, stronger identity commitments could be protective factors and predictive of higher well-being over time, or they may be a consequence of experiencing well-being. Findings of the few longitudinal studies that have been conducted indicate that stronger commitments are predictive of psychosocial adjustment (Crocetti, Branje, Rubini, Koot, & Meeus, 2017; Luyckx, Soenens, Goossens, & Vansteenkiste, 2007; Schwartz, Klimstra, Luyckx, Hale, & Meeus, 2012; Van Doeselaar, Meeus, Koot, & Branje, 2016), whereas less support was found for psychosocial adjustment predicting commitment strength (Schwartz et al., 2012). Because longitudinal studies on this are still scarce, more evidence is needed before it can be concluded that strong identity commitments are primarily a protective factor, predicting well-being, or whether they are a consequence of this.

To examine this, we focused on the link of identity commitments with two distinct but interrelated indicators of decreased well-being among young people:

depressive symptoms and stressful life events. Young people with depressive symptoms feel down, experience less pleasure in activities, or have feelings of worthlessness (American Psychiatric Association, 2013). Depressive symptoms tap into a continuous construct with higher levels indicating the presence of more, or more severe, symptoms of depression. The degree to which young people experience depressive symptoms increases during adolescence, and peaks at the end of adolescence (Holsen & Birkeland, 2017; Meeus, 2016). Young people's depressive symptoms are bidirectionally associated with stressful life events. Stressful life events are undesirable events that impact individuals' lives as they require substantial readjustment (Holmes & Rahe, 1967; Mueller, Edwards, & Yarvis, 1977). Young people that are exposed to stressful life events have been found to experience an increase in depressive symptoms (i.e., the stress exposure effect), while young people who experience depressive symptoms experience more stressful life events over time (i.e., the stress generation effect; Cole, Nolen-Hoeksema, Girgus, & Paul, 2006; Liu & Alloy, 2010; Pine, Cohen, Johnson, & Brook, 2002).

Although previous findings indicated that stronger commitments are negatively associated with depressive symptoms and stressful life events, only a few longitudinal studies have examined these associations across time (Anthis, 2002; Schwartz et al., 2012). In the present article, we assessed the link of young people's identity commitments with depressive symptoms and stressful life events across time in two longitudinal studies.

Identity Domains

Identity commitments are constructed in multiple identity-relevant domains. Many studies on identity commitment have aggregated these domains into one general commitment factor (Crocetti et al., 2008; Luyckx et al., 2006) or into two broad domains of ideological and interpersonal commitment (Grotevant & Adams, 1984). In the present article, we take a slightly different approach by focusing on two more specific domains of personal identity: the career and interpersonal domain (e.g., Meeus, Iedema, Helsen, & Vollebergh, 1999). These identity domains are highly salient for a vast majority of young people (Kroger, 1986; Skorikov & Vondracek, 2011). To examine identity commitments' role across adolescence and young adulthood, we focused within each domain on two more specific life stage appropriate identity commitments. The career domain consisted of the commitment to education and work. In school, adolescents make their first important career identity choices. Later, these choices for a broad occupational field are expected to become more specific, when young adults choose a specific occupation. Because of the importance of educational choices for occupational possibilities, educational

identity is expected to be a precursor of occupational identity. Indeed, educational and occupational identity formation are closely linked (Branje, Laninga-Wijnen, Yu, & Meeus, 2014; Negru-Subtirica, Pop, & Crocetti, 2017). Within the interpersonal identity domain, first introduced by Grotevant, Thorbecke, and Meyer (1982), we focused on the commitment to a best friend and romantic partner. During adolescence, friends become increasingly important (Brown, 2004), while romantic relationships increase in importance during young adulthood (Arnett, 2000).

Identity Commitments and Depressive Symptoms

By forming strong commitments, young people can acquire a sense of continuity and meaning in life (Erikson, 1968; Negru-Subtirica, Pop, Luyckx, Dezutter, & Steger, 2016). According to existential psychologists (e.g., Frankl, 1985), lacking a sense of meaning can result in depressive symptoms. Having weak commitments can thus be emotionally troubling (Thoits, 1983). In adolescence and young adulthood, young people are expected to rethink their childhood identifications and become increasingly more independent from parents while figuring out potential future adult roles (Arnett, 2000; Erikson, 1968; Koepke & Denissen, 2012). With adulthood nearing, it becomes increasingly urgent to figure out which adult roles to prepare for and commit to. As a result, inability to resolve the developmental task of identity formation might become increasingly stressful with age (Meeus et al., 1999). Therefore, weaker identity commitments were expected to be related to relative increases in depressive symptoms, and this effect was expected to become stronger with age from adolescence onwards.

Conversely, experiencing depressive symptoms could hinder identity formation. Establishing and maintaining strong identity commitments is an effortful process, in which individuals constantly form, evaluate, and revise their commitments (Crocetti et al., 2008; Luyckx et al., 2006). Côté (1996) stated in his identity capital model that cognitive abilities such as cognitive flexibility and critical thinking skills are necessary resources for this. However, depressive symptoms include a lack of energy, diminished cognitive abilities, and problems with decision-making (American Psychiatric Association, 2013). Moreover, depressive symptoms include a reduced interest in most activities. For young people who find almost nothing interesting, it might be harder to find people, an education, or a job to whom or which they would like to commit. Therefore, a higher degree of depressive symptoms could predict a weakening of commitments.

Likely, career commitments weaken more when experiencing depressive symptoms, compared with interpersonal commitments. Interpersonal relationships are highly important to individuals in times of distress (Ebata & Moos, 1991; Updegraff & Taylor, 2000). Therefore, interpersonal commitments might be more

salient during stressful times compared with career commitments. During difficult times, the resources that individuals have left might thus primarily be used to maintain interpersonal commitments, rather than career commitments. This might result in relatively little change in the strength of interpersonal commitments, but a relative weakening of career commitments when experiencing depressive symptoms.

Previous cross-sectional studies confirmed a concurrent negative association between identity commitments and depressive symptoms (e.g., Crocetti et al., 2008; Luyckx et al., 2006; Luyckx, Klimstra, Duriez, Van Petegem, & Beyers, 2013). This association was indeed stronger for commitments related to the career domain compared with the interpersonal domain (Clancy & Dollinger, 1993; Helsen, Vollebergh, & Meeus, 1999). In line with the idea that the importance of commitments increases during adolescence and young adulthood, some cross-sectional studies indicated that the association between commitment and depressive symptoms became stronger during adolescence and young adulthood (Luyckx et al., 2013; Meeus et al., 1999). Findings of a longitudinal study indicated that identity commitments have bidirectional negative associations with depressive symptoms in adolescence (Schwartz et al., 2012). To the best of our knowledge, no longitudinal study exists on how commitment and depressive symptoms relate to each other over time after adolescence.

Identity Commitments and Stressful Life Events

Not knowing what to commit to in life might not only be emotionally troubling, it could also result in a higher risk of experiencing stressful life events. Identity commitments can function as a compass in life, because they not only reflect who one is but also provide guidance in how to behave (Thoits, 1983). The roles to which young people commit often go with behavioral expectations and requirements. It has been argued that these requirements provide individuals with a sense of purpose and guidance. Individuals with stronger commitments to career goals and interpersonal relationships will invest in these commitments, by behaving in line with the achievement of career goals and strengthening of relationships (Roberts, O'Donnell, & Robins, 2004). This might result in experiencing fewer negative career and interpersonal events (e.g., Klimstra et al., 2013). Moreover, lacking strong commitments and thus guidance might result in more random and risky behaviors and choices. Erikson (1968) already indicated that identity confusion could result in behaviors like running away, dropping out of school, quitting jobs, and staying out all night. In line with this, lacking strong commitments has been found to be associated with more hazardous and health-compromising behaviors (Schwartz et al., 2011). Consequently, stronger commitments could reduce the likelihood of

experiencing stressful life events. Because commitments likely become more important during adolescence and young adulthood, we also expected commitments to become an increasingly stronger predictor of stressful life events with age.

Conversely, exposure to stressful life events might have a detrimental effect on the construction and maintenance of identity commitments. Stressful life events can constitute a reason to reassess the current life situation and present commitments (Grotevant, 1987). For example, someone experiencing the death of a family member might question their career path, because of the realization that life is short and that one should do what one likes most. Moreover, like depressive symptoms, the experience of stressful life events could compete with the resources that are needed to construct and adjust identity commitments (Côté, 1996). Stressful life events might directly result in loss of social or financial resources, and the accompanying stress and necessary coping could diminish individuals' cognitive resources. Consequently, exposure to stressful life events might result in a weakening of commitments. Like the association with depressive symptoms, interpersonal commitments might possibly weaken less after stressful life events, compared with career commitments, because of their importance in times of distress (Ebata & Moos, 1991; Updegraff & Taylor, 2000).

A few previous studies on adult samples have indicated that commitments might be affected by stressful life events. Findings of a retrospective study suggested that stressful life events mostly preceded a state of searching for a stable interpersonal and career identity (Kroger & Green, 1996). In addition, a two-wave longitudinal study indicated that different categories of stressful life events had different effects on commitments. Specifically, health-related events had detrimental effects whereas family-related events had stimulating effects (Anthis, 2002). However, this study examined the relative change in commitment strength that took place after the occurrence of stressful life events. The baseline and follow-up measure of commitment both occurred after the year in which exposure to stressful life events took place. These previous findings could indicate that the strength of commitments reestablishes after the stressful period, or even then worsens. In the present studies, we examined whether commitment strength weakens relatively during the stressful period itself.

When examining associations between stressful life events and identity commitments, it is important to keep in mind whether certain stressful life events occur in the same domain as the commitment. For example, experiencing academic problems and becoming unemployed are directly related to individuals' careers. Individuals encountering stressful events are more or less forced to reevaluate their commitments in the respective domain. In addition, domain-specific commitments likely have a stronger predictive effect on stressful life events in the same domain

(e.g., Klimstra et al., 2013). To examine whether stressful life events in general are linked to identity commitments, we checked whether a domain-specific commitment was also associated to stressful life events outside of this particular domain.

Identity Commitments as a Buffer

The role of identity commitments might go beyond simple associations with depressive symptoms and stressful life events over time. Although previous studies showed that bidirectional positive associations exist between young people's depressive symptoms and stressful life events (Cole et al., 2006; Liu & Alloy, 2010; Pine et al., 2002), it is also assumed that individuals differ in their resilience to the stress exposure effect (Hankin & Abramson, 2001). This is reflected in empirical findings, as not all studies found a strong or significant stress exposure effect (Compas, 1987). Stronger commitments might form a buffer against the stress exposure effect (Updegraff & Taylor, 2000). Commitments could function as a compass in life during times of stress. Young people with stronger commitments might be better able to cope with stressful life events, as they have clearer goals to guide them.

The idea that stronger identity commitments make individuals less susceptible to developing depressive symptoms in times of stress has been suggested in previous studies. These studies focused on a specific stressful event (i.e., chronic illnesses; Luyckx et al., 2008) or on a specific identity domain not similarly salient to all groups of the general population (i.e., ethnic identity; Chavez-Korell & Torres, 2014). In the present research, we focused on the possible buffering role of generally salient personal identity commitments including a broad range of stressful life events.

The Present Studies

In two longitudinal studies, we examined the hypotheses that: (a) stronger commitments are predictive of a relative decrease in depressive symptoms, (b) experiencing a higher level of depressive symptoms is associated with a relative weakening of commitments, (c) stronger commitments are predictive of experiencing relatively fewer stressful life events, (d) experiencing more stressful life events is associated with a relative weakening of commitments, and (e) having stronger commitments buffers against the effect of stressful life events on depressive symptoms. When examining these hypotheses, we controlled for the previously found bidirectional effects between stressful life events and depressive symptoms, and for associations with the other domain-specific commitment (e.g., predictions of depressive symptoms by interpersonal commitments were controlled for the prediction by career commitments). Regarding the different identity

domains, we expected that (f) stressful life events and depressive symptoms would more strongly predict a relative weakening of career commitments than interpersonal commitments. With regard to age, we expected that (g) both commitments would be more strongly related to a relative decrease in depressive symptoms and stressful life events at the end of adolescence, compared to early adolescence.

We examined these hypotheses in two longitudinal studies, spanning 8 and 6 years. These studies differ somewhat in their time intervals (4 vs. 3 years), the specific life events included, and the time at which they were administered (2001-2009 vs. 1991-1997). Using two studies, we could test whether we could conceptually replicate our findings. Moreover, Study 2 builds on Study 1 by focusing not only on the period of adolescence, but also on young adulthood. Another strength of Study 2 is the use of a stressful life events measure that was likely more accurate compared with Study 1; Study 2 participants had to look back in time less far to report stressful events (i.e., up to 3 years) than in Study 1 (i.e., up to 8 years).

STUDY 1

METHOD

Participants

Data for Study 1 were drawn from the CONflict And Management Of RElationships project (CONAMORE). In this longitudinal project, 1,341 adolescents participated. We only used data from the first, fifth and sixth wave, referred from here on as Time 1 (T1), Time 2 (T2), and Time 3 (T3) respectively. These data were gathered in November to December 2001, 2005, and at the end of 2009 to the start of 2010 respectively. Participants reported on the experienced stressful life events at T3, using the Life History Calendar. For the current study, we selected the 951 participants who completed this measure.

Selected participants did not differ significantly from unselected participants in career commitments, interpersonal commitments, or depressive symptoms at T1, $p \geq .050$. However, selected participants consisted of significantly more women (56.2% vs. 40.3%), $\chi^2(1) = 27.98$, $p < .001$, $\varphi = .14$, were slightly younger (M_{age} = 13.56 years, SD = 2.00 vs. M_{age} = 13.94 years, SD = 2.12), $t(688) = 3.03$, $p = .003$, d = .18, and identified themselves significantly more often as Dutch (91.5% vs. 70.3%), $\chi^2(4) = 107.94$, $p < .001$, $\varphi = .29$. Within this selected sample, only 2.21% of the commitment and depressive symptoms measurements were missing across the three waves. Little's (1988) Missing Completely at Random (MCAR) test was not significant $\chi^2(106) = 117.99$, $p = .201$, suggesting that these missing values occurred

at random. Cases with missing data were included in Mplus 7 using Full Information Maximum Likelihood (FIML; Muthén & Muthén, 1998-2015).

Participants were divided into two subsamples. The early-to-late adolescent subsample consisted of 683 adolescents (54.9% women, 91.2% identified themselves as Dutch) aged 11 to 15 years at T1 (M_{age} = 12.36, *SD* = 0.54). The middle adolescent-to-young adult subsample consisted of 268 participants (59.3% women, 92.3% identified themselves as Dutch) aged 16 to 20 years at T1 (M_{age} = 16.60, *SD* = 0.75).

Procedure

Participants were recruited from high schools in the surroundings of Utrecht, the Netherlands.[9] Before the start of the study, participants and their parents received a letter with information on the project and could provide written informed consent. More than 99% of the approached adolescents decided to participate. Adolescents completed the questionnaires at school after school hours or during home visits under supervision of trained assistants. The institutional review board of Utrecht University approved the CONAMORE project.

Measures

Identity commitments. The Utrecht-Management of Identity Commitments Scale (U-MICS) was used to assess commitments to education, work, friends, and romantic partners. Each commitment was measured with five items (e.g., "my education/work/best friend/partner gives me certainty in life"), answered on a 5-point scale ranging from 1 (*completely true*) to 5 (*completely untrue*). Scores were recoded, with higher scores reflecting stronger commitments. A previous study by Crocetti et al. (2008) showed support for the construct validity of the U-MICS. In our study, Cronbach's αs ranged from .83 to .97 across waves and subsamples. Interpersonal commitment consisted of the average commitment to a friend and/or romantic partner. Career commitment consisted of the average commitment to education and/or work. Whether participants reported on a domain-specific commitment depended on the applicability (e.g., having a romantic partner or not). Because almost no adolescents had a job at T1, work commitment was only assessed at T2 and T3.

Depressive symptoms. The Children's Depression Inventory (CDI; Kovacs, 1985) was used to assess depressive symptoms. This self-report questionnaire

[9] Although participants were nested within schools at T1, no control for nesting across site was used because all participants changed their school at least once, between T1 and T3. Based on normative changes in the Dutch educational system, only in the early-to-late adolescent subsample two-thirds of the participants were expected to attend the same school at T2 as at T1. At T3, all participants were expected to have changed schools.

consists of 27 items (e.g., "I am sad all the time"), answered on a 3-point scale: 1 (*false*), 2 (*a bit true*), and 3 (*very true*). Previous studies indicate the CDI has sufficient construct validity (Roelofs et al., 2010). Cronbach's αs ranged from .88 to .94 across waves and subsamples.

Stressful life events. Stressful life events were assessed at T3 with the Life History Calendar (Caspi et al., 1996) adapted by Meeus (2009). Participants indicated whether and when they had experienced several events since they were 12 years old. Consequently, data on stressful life events that had occurred during the study were available for all participants. From the Life History Calendar we selected events that were previously judged to be stressful for young people (Lüdtke, Roberts, Trautwein, & Nagy, 2011; Swearingen & Cohen, 1985). We focused on generally stressful events, as we were interested in the objective occurrence of events, and including participants' judgments on the impact of events could be confounded with the measure of depressive symptoms (Mueller et al., 1977). The following events were included: breakup with a romantic partner, academic problems (i.e., repeating a grade, going to a lower educational level, and ending education without a diploma), becoming unable to work, becoming unemployed, becoming physically ill or wounded, being the victim of a crime, and experiencing the death of someone close (i.e., a family member or intimate friend). For events that took place in November or December 2001 or 2005, or that took place in 2001 or 2005 but for which no month was specified, it was unclear whether these had happened before or after T1 and T2. Therefore, these events were excluded (4.34% of events). For all participants we computed the frequency of events that had taken place between T1 and T2, and between T2 and T3.

Strategy of Analysis

The hypotheses were examined with a structural equation model in Mplus 7 (Muthén & Muthén, 1998-2015). The model consisted of the following parameters (see Supplemental Figure 5.1): (a) 4-year stability paths for career commitment, interpersonal commitment, stressful life events, and depressive symptoms; (b) cross-lagged effects between career commitment, interpersonal commitment, stressful life events, and depressive symptoms; (c) interaction terms between career commitment and stressful life events and between interpersonal commitment and stressful life events predicting depressive symptoms; (d) concurrent correlations between career commitment, interpersonal commitment, and depressive symptoms at T1; (e) concurrent correlations between the residuals of career commitment, interpersonal commitment, and depressive symptoms at T2 and T3. These latter correlations reflect associations between relative changes and will thus be referred to as correlated relative changes from here on. The model was tested and evaluated

according to conventional procedures and norms (for details see the supplemental materials).

RESULTS AND DISCUSSION

Descriptive Analyses

Descriptive statistics and relative stability of the variables of interest are shown in Table S5.1. Career commitment was not significantly stable across T1 and T2 in the middle adolescent-to-young adult subsample. Likely, this was because of the change in measurement focus from education to work. During the 4 years between waves, most participants (62.2% to 88.9% across waves and subsamples) experienced at least one stressful life event. Table S5.2 shows the correlations between the variables of interest.

Longitudinal Model

Time invariance and model fit. Time invariance tests showed that each cross-lagged effect, correlated relative change, and interaction effect could be constrained to be time invariant without significantly reducing the model fit, ΔRMSEAs = -.001 – .002, ΔCFIs = -.005 – .001, *p*s of $\Delta\chi^2_{SB} \geq .038$. This time invariant model had a good fit, $\chi^2_{SB}(57) = 71.35$, $p = .096$, CFI = .98, RMSEA = .02, 90% CI of RMSEA [.000, .027]. The significant parameter estimates are shown in Figure 5.1. A full overview of the results is available in Table S5.3.

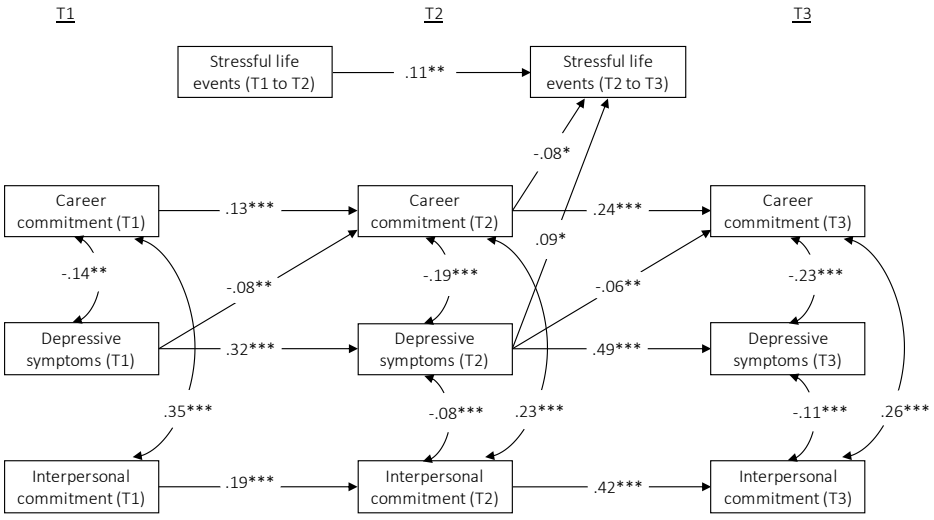

Figure 5.1 | Standardized estimates of the model analyzed in Study 1. For reasons of clarity, cross-lagged effects, correlations, and interaction effects that were not significant are not shown.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Identity commitments and depressive symptoms. Our findings showed that commitments' strength did not predict a relative change in depressive symptoms 4 years later. Using a multi-group analysis we tested whether the cross-lagged effects of both commitments on depressive symptoms were stronger in the older (middle adolescent-to-young adult) subsample than in the younger (early-to-late adolescent) subsample. In contrast to our hypothesis, the cross-lagged effects could be constrained to be equal across subsamples without worsening the model fit significantly: interpersonal commitment, ΔRMSEA = .001, ΔCFI = -.002, $\Delta\chi^2_{SB}(1) = 3.27$, $p = .071$, career commitment, ΔRMSEA = .000, ΔCFI = .000, $\Delta\chi^2_{SB}(1) = 0.76$, $p = .385$.

The reversed cross-lagged effects showed that higher levels of depressive symptoms were significantly associated with a relative weakening over time of career commitment, but not interpersonal commitment. Although the confidence intervals of the effects from depressive symptoms to career commitment and from depressive symptoms to interpersonal commitments overlapped, the overlap on one side of the confidence interval (i.e., one confidence interval "arm") was less than 50%: 28% for the T1 to T2 effects, and 36% for the T2 to T3 effects (Cumming, 2009). This suggests that the cross-lagged effects of depressive symptoms predicting a weakening of career commitment, 95% CIs T1-T2 [-.13, -.03] and T2-T3 [-.10, -.02], were stronger than the nonsignificant cross-lagged effects on interpersonal commitment, 95% CIs T1-T2 [-.04, .06] and T2-T3 [-.04, .05], $p < .05$, as expected. Furthermore, a relative strengthening in interpersonal and career commitments was associated with a relative decrease of depressive symptoms.

Identity commitments and stressful life events. The cross-lagged effect of career commitment on stressful life events was significant. Stronger career commitments were associated with a relative decrease in stressful life events. This effect appeared to be generalizable to events beyond stressful career events because it remained significant and of similar strength when excluding the stressful life events directly associated with individuals' careers (i.e., having academic problems, becoming unemployed, and becoming unable to work), $\beta = -.10$, $p = .006$. The cross-lagged effect of interpersonal commitment on stressful life events was not significant. A multi-group analysis showed that the cross-lagged effects of both types of commitments on stressful life events could be constrained to be equal between the early-to-late adolescent and middle adolescent-to-young adult subsamples without worsening the model fit significantly: interpersonal commitment, ΔRMSEA = .001, ΔCFI = -.002, $\Delta\chi^2_{SB}(1) = 2.73$, $p = .099$, career commitment, ΔRMSEA = .000, ΔCFI = .001, $\Delta\chi^2_{SB}(1) = 0.14$, $p = .712$. As for the cross-lagged effect of commitments on depressive symptoms, this finding indicates that during adolescence commitments did not become a stronger predictor.

The reversed cross-lagged effects of experiencing stressful life events on a relative changes in interpersonal and career commitment were not significant. Commitments did not weaken relatively during a period of many experienced stressful life events.

Identity commitments as a buffer. Lastly, we tested whether commitments buffered against the effect of stressful life events on depressive symptoms. Although depressive symptoms predicted a relative increase in stressful life events, the reversed exposure effect was not significant. The interaction terms referring to a possible buffering effect of commitments were also not significant.

Summary of Findings

Across 4-year timespans, stronger identity commitments were predictive of experiencing relatively less stressful life events, while depressive symptoms predicted a relative weakening of commitments. These associations only appeared for career commitments, and not for interpersonal commitments. There was no evidence for a buffering role of commitments or an increase in the strength of identity commitments' predictive role across adolescence.

STUDY 2

In Study 2, we examined whether we could conceptually replicate Study 1's findings, using slightly different measures and a 3-year interval. Study 2 was already performed in the 1990s, yet this study did not suffer from some limitations of Study 1. In Study 2, individuals reported the stressful life events they had experienced in the last 3 years at each wave. This is likely a more accurate measure than the measure of Study 1, in which participants recalled stressful life events only at the end of the study (Raphael, Cloitre, & Dohrenwend, 1991). The use of this potentially more accurate measure might produce support for the exposure effect of stressful life events on commitments and depressive symptoms, as well as for the buffering role of commitments in this latter exposure effect.

Furthermore, Study 2 consisted of a sample with a larger age range, compared with Study 1. This was important because we expected that commitments would become more influential with age across adolescence and young adulthood (Erikson, 1968; Luyckx et al., 2013; Meeus et al., 1999). In Study 1, no evidence for age differences in the predictive effects of commitments on depressive symptoms and stressful life events was found. However, in Study 1, most participants had only entered young adulthood at the last wave, as the early-to-late adolescent subsample was on average 20 years of age at the last wave and the middle adolescent-to-young adult subsample was on average 24 years by then. In Study 2, we examined our hypotheses in a sample that consisted of adolescents and young adults (with ages

up to 24 years) at baseline. This expanded age range might produce evidence for the expected age differences in the predictive effect of commitments.

METHOD

Participants

Data were derived from the longitudinal Utrecht Study of Adolescent Development (USAD) 1991–1997 (Meeus & 't Hart, 1993). For this project, a sample of adolescents and young adults aged 12 to 24 years and their families was recruited from an existing panel of 10,000 households. Of the approached families, 73.9% decided to participate. This sample was representative of the native Dutch adolescent population of the early 1990s ('t Hart, 1992). Data were gathered with a 3-year interval in 1991, 1994, and 1997, in this study referred to as T1, T2, and T3, respectively. At T1, a sample of 3,393 adolescents and young adults participated (99.2% identified themselves as Dutch). A selection of 1,966 and 1,307 individuals participated in the longitudinal project at T2 and T3, respectively. Participants initially provided their consent for the longitudinal part of the study, but about 24% of the participants later refused to participate at T2 or T3. Little's (1988) MCAR test was significant $\chi^2(12{,}991) = 15{,}330.81$, $p < .001$, but the normed χ^2 (χ^2/df) of 1.18 indicated that the items had a random pattern of missingness (Bollen, 2014). For each variable, missing items were imputed with the expectation maximization (EM) algorithm in case an individual reported on at least 66% of the items of that particular variable. If an individual reported on less than 66% of the items of a variable, this variable was judged as missing and not imputed.

For the present study, we selected the 1,904 participants (56.7% women) who had (potentially imputed) scores on at least half of the variables of interest on at least two of the three measurement waves. These participants were on average 18.26 years old ($SD = 3.76$) at T1. We distinguished two subsamples: a group of 960 adolescents (12 to 17 years at T1, $M_{age} = 15.04$, $SD = 1.66$, 55.5% women) and a group of 944 young adults (18 to 24 years at T1, $M_{age} = 21.54$, $SD = 2.08$, 57.8% women). Selected participants were somewhat younger, compared with unselected participants ($M_{age} = 19.43$ years, $SD = 3.47$), $t(3298) = 9.33$, $p < .001$, $d = 0.32$, and consisted of significantly more women, compared with unselected participants (48.3%), $\chi^2(1) = 22.78$, $p < .001$, $\varphi = .08$. At T1, the selected participants reported significantly fewer stressful life events, $t(2986) = 4.058$, $p < .001$, $d = 0.14$, and had slightly weaker interpersonal commitments, $t(3033) = 2.01$, $p = .044$, $d = 0.07$. These groups did not differ significantly in career commitments or depressive symptoms at T1, $p \geq .076$. Although selected participants differed from unselected participants, differences were rather small and unlikely to substantially influence our results. Within the selected sample, 13.51% of the variables were missing. Little's (1988)

MCAR test, $\chi^2(655) = 841.78$, $p < .001$, χ^2 (χ^2/df) = 1.29, indicated that the variables were missing at random (Bollen, 2014). We retained cases with missing data in Mplus 7, using FIML (Muthén & Muthén, 1998-2015).

Procedure

At each wave, participants and their parents provided active informed consent. Next, participants completed, amongst others, the questionnaire measuring stressful life events at home in the presence of a trained assistant. Afterwards, participants were requested to fill out other questionnaires on their own, including the measures on depressive symptoms and identity commitments, and send them to the research organization within a week. The study was not reviewed by any research ethics committee, but was approved by the Netherlands Organisation for Scientific Research in 1990 and conducted in accordance with the APA ethical standards (American Psychological Association, 2010).

Measures

Identity commitments. The Utrecht-Groningen Identity Development Scale (U-GIDS; Meeus, 1996) was used to measure the commitments to education, work, a best friend, and a romantic partner. The U-GIDS is highly similar to the newer version of this measure (i.e., U-MICS), used in Study 1. Depending on participants' age (i.e., 12 to 14 years, or 15 years and older), two slightly different versions of the U-GIDS were used. We used the five items that were included in both versions of the U-GIDS, as well as in Study 1's measure. In contrast to Study 1, all participants reported on one of the interpersonal commitments (i.e., to their best friend or romantic partner) and one of the career commitments (i.e., to their education or work). Participants aged 12 to 14 years were asked to report on the commitment to their best friend and their education. Participants aged 15 years and older reported on the peer (best friend or romantic partner) that was most important to them, and on the commitment to their education or work depending on the applicability. Our variable interpersonal commitment consisted of participants' commitment to a best friend or romantic partner. Career commitment consisted of participants' commitment to education or work. Cronbach's αs ranged from .85 to .90 across waves and subsamples.

Depressive symptoms. A subscale of a shortened version of the General Health Questionnaire (GHQ; Goldberg, 1978) was used to measure depressive symptoms during the past 4 weeks. This subscale consisted of four items (e.g., "feeling unhappy and dejected"), which could be answered on a 4-point scale ranging from 1 (*not at all*) to 4 (*much more than usual*). Cronbach's αs ranged from .82 to .85 across waves and subsamples.

Stressful life events. Stressful life events were assessed by asking participants to indicate if they had experienced a list of events during the past 3 years. From this list, we selected events that were previously judged to be stressful for young people (Lüdtke et al., 2011; Swearingen & Cohen, 1985). The following events were included: becoming unemployed or unable to work, being the victim of a serious crime (i.e., robbery, theft, or rape), having financial difficulties, experiencing a major accident, being severely ill, being expelled from school, the death of a close friend, the death of a parent, the death of a grandparent, severe illness of a parent, severe illness of someone close, a major accident of someone close, parental divorce, a suicide (attempt) of someone close, and the breakup of a romantic relationship. For all participants a frequency score was computed that represented the number of stressful life events experienced in the 3 years before each wave.

Strategy of Analysis

The model and analyses in Study 2 were similar to those of Study 1. The only difference was the inclusion of stressful life events that occurred before T1, which was not included in Study 1. Because of this included variable, the cross-lagged effects predicting stressful life events between T1 and T2 now represent a prediction of relative change.

RESULTS AND DISCUSSION

Descriptive Analyses

Descriptive statistics and relative stability of the variables of interest are displayed in Supplemental Table 5.4. In the 3 years before each wave, most participants experienced at least one stressful life events (69.9% to 81.4% across waves and subsamples). Supplemental Table 5.5 shows the correlations between the variables of interest.

Longitudinal Model

Time invariance and model fit. All cross-lagged effects, correlated relative changes, and interaction effects could be constrained to be time invariant without significantly worsening the model fit, ΔRMSEAs = .000, ΔCFIs = -.002 – .000, *p*s of $\Delta\chi^2_{SB} \geq .021$. This resulted in an acceptable model fit, $\chi^2_{SB}(79) = 182.68$, $p < .001$, CFI = .94, RMSEA = .03, 90% CI of RMSEA [.021, .031]. Figure 5.2 shows the significant parameter estimates of this time invariant model. A full overview of the results is available in Supplemental Table 5.3.

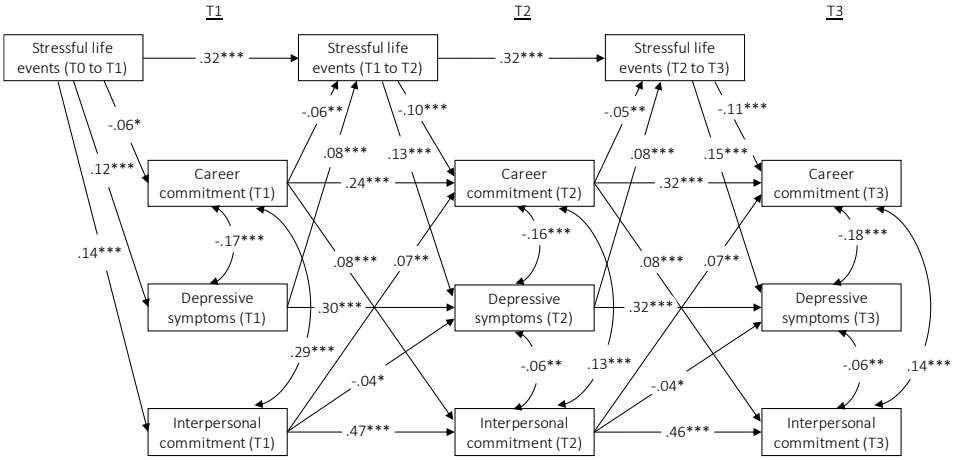

Figure 5.2 | Standardized estimates of the model analyzed in Study 2. For reasons of clarity, cross-lagged effects, correlations, and interaction effects that were not significant are not shown.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Identity commitments and depressive symptoms. The cross-lagged effects of commitments on depressive symptoms showed that stronger interpersonal commitments were associated with a small relative decrease in depressive symptoms. For career commitment this effect was not significant. A multi-group analysis showed that the cross-lagged effects of interpersonal as well as career commitment predicting relative changes in depressive symptoms could be constrained to be equal between the adolescent and young adult subsamples: interpersonal commitment, ΔRMSEA = -.001, ΔCFI = .000, $\Delta\chi^2_{SB}(1) = 0.91$, $p = .339$, career commitment, ΔRMSEA = .000, ΔCFI = -.002, $\Delta\chi^2_{SB}(1) = 5.29$, $p = .021$. This showed that the predictive effect of commitments was not stronger in the older subsample.

The reversed cross-lagged effects of depressive symptoms on career and interpersonal commitment were not significant.[10] Relative changes in interpersonal and career commitments were significantly negatively associated with relative changes in depressive symptoms.

Identity commitments and stressful life events. Significant cross-lagged effects showed that a stronger career commitment was related to a relative decrease in stressful life events. These effects remained significant and of similar strength when excluding events directly related to individuals' careers (i.e., becoming expelled

[10] Removing the cross-lagged effects of stressful life events on interpersonal and career commitments from the model, resulted in significant negative cross-lagged effects of depressive symptoms on career commitments, βs = -.04, *p*s = .034, but not on interpersonal commitments, βs = .03, *p*s = .108.

from school, and becoming unemployed or unable to work), βs = -.04, p = .028. The cross-lagged effects of interpersonal commitment on stressful life events were not significant, however. A multi-group analysis showed that both cross-lagged effects could be constrained to be equal between the adolescent and young adult subsample without reducing the model fit significantly: interpersonal commitment, ΔRMSEA = .000, ΔCFI = .000, $\Delta\chi^2_{SB}(1) = 1.63$, p = .202, career commitment, ΔRMSEA = .000, ΔCFI = -.001, $\Delta\chi^2_{SB}(1) = 3.36$, p = .067. This contradicts the hypothesis that the predictive effect of commitments' strength increases with age.

The reversed cross-lagged effects showed that experiencing more stressful life events was associated with a relative weakening of career commitment. These effects remained significant and of similar strength when excluding the stressful life events directly related to careers, βs = -.08, p < .001. Stressful life events did not predict changes in interpersonal commitment strength. The confidence intervals of the cross-lagged effects predicting a weakening in career commitment, 95% CIs T1-T2 [-.13, -.06] and T2-T3 [-.14, -.07], did not overlap with those of the nonsignificant cross-lagged effects on interpersonal commitment 95% CIs T1-T2, [-.03, .03] and T2-T3 [-.04, .03]. As expected, stressful life events were thus significantly stronger associated with a relative weakening in career commitments, compared with interpersonal commitment (p < .01; Cumming, 2009).

Identity commitments as a buffer. Stressful life events and depressive symptoms were significantly bidirectionally positively associated over time. However, commitment strength did not moderate the effect of stressful life events on depressive symptoms, because none of the interaction effects were significant.

Summary of Findings

In Study 2, we conceptually replicated several of the findings of Study 1. Again, stronger career commitments predicted experiencing relatively less stressful life events over time. In addition, career commitment was again the only domain-specific commitment that weakened relatively after negative experiences, although this time after experiencing stressful life events instead of depressive symptoms. Like in Study 1, Study 2's findings did not show evidence for a buffering role of commitments or an increase in the strength of commitments' predictive effect with age. Unlike in Study 1, the results of Study 2 showed that stronger interpersonal commitments predicted a small relative decrease of depressive symptoms.

GENERAL DISCUSSION

The main goal of the two longitudinal studies was to investigate the role of young people's career and interpersonal identity commitments in the experience of depressive symptoms and stressful life events. Overall, our findings indicate that

identity commitments predict depressive symptoms and stressful life events, but are also predicted by these negative experiences. However, the strength of evidence varied per hypothesis.

Identity Commitments and Depressive Symptoms

Young people's strength of identity commitments was expected to be negatively related to depressive symptoms over time. Evidence for this was repeatedly shown in the associated relative changes. Across studies, a relative strengthening of career and interpersonal commitments correlated with a relative decrease in depressive symptoms. Regarding the direction of effects, Study 2's findings showed that stronger interpersonal identity commitments predicted a relative decrease in depressive symptoms 3 years later, even after controlling for exposure to stressful life events. This finding is in line with the idea that not having constructed strong commitments is emotionally troubling (Thoits, 1983), possibly because this coincides with a lack of meaning and purpose in life (Frankl, 1985). It is also in line with a 1-year interval study by Schwartz et al. (2012) on this association in adolescence. However, in Study 1, stronger commitments were not predictive of relative decreases in depressive symptoms 4 years later. The current and previous findings suggest that weak commitments put individuals at risk for distress across a relatively long period (i.e., 1 to 3 years), but that these effects might wear out at some point (i.e., four years). This could especially apply to the periods of adolescence and young adulthood, because this is when identity is primarily expected to develop (Arnett, 2000; Erikson, 1968). Therefore, weak commitments might only have limited predictive power across time.

Furthermore, we expected that experiencing depressive symptoms, which can involve diminished cognitive abilities and interests (Côté, 1996), would predict a relative weakening of commitments. We found inconsistent support for this expectation, as such an association was only found in Study 1 for career commitment. This lack of strong support seems not in line with findings by Schwartz et al. (2012), which indicated bidirectional associations between general identity commitments and depressive symptoms in adolescence across 1-year intervals. The difference in findings is likely explained by the fact that we controlled for the predictive effect of stressful life events on commitments. Without stressful life events as a control variable, depressive symptoms did predict a relative weakening of career commitments in Study 2 (see Footnote 2). Possibly, both types of negative experiences overlap in their prediction of commitment strength, because they both compete with the resources that are needed to construct and adjust identity commitments (Côté, 1996).

Identity Commitments and Stressful Life Events

A highly consistent finding was that young people with stronger career commitments experienced relatively less stressful life events over time. This result appeared in both studies, after controlling for the influence of depressive symptoms on stressful life events. Moreover, in both studies this finding was generalizable to events beyond stressful career related events. The mechanism behind this novel finding could be that identity commitments function as a compass guiding the behavior of young people (Erikson, 1968; Roberts et al., 2004; Thoits, 1983). Young people with stronger career commitments likely behave in function of the achievement of career goals, resulting in less random and risky behaviors and choices.

Conversely, exposure to stressful life events did not consistently predict relative changes in identity commitments across the two studies. Only in Study 2, exposure to stressful life events predicted a relative weakening of career commitment. One possible explanation for this difference in findings is that the measures of stressful life events were different across Study 1 and 2. Because of the longer period on which participants had to reflect in Study 1 (i.e., 8 years compared with 3 years in Study 2), it might have been harder to indicate accurately whether and when events had occurred (Raphael et al., 1991). However, even across the last 4 years of Study 1 stressful life events were not predictive, while the influence on accuracy of recalling for this period is likely comparable with Study 2. Our inconsistent findings could, therefore, also indicate that the exposure effect of stressful life events on commitments is not that strong in every individual. Perhaps, such effects can be buffered by other factors like support of friends or family, which can differ in prevalence between samples.

Identity Commitments as a Buffer

Although we found support for the anticipated effect of depressive symptoms on stressful life events in both studies, we found inconsistent support for the reversed effect of stressful life events on depressive symptoms (Cole et al., 2006; Liu & Alloy, 2010; Pine et al., 2002). Like the effect of stressful life events on career commitments, this inconsistency could be a result of the measure of stressful life events in Study 1 or be caused by buffer factors. However, neither of our studies showed evidence for a buffer effect of commitments in the effect of stressful life events on depressive symptoms.

Apparently, being more strongly committed to identity choices is not enough to be resilient in stressful times. Perhaps this is caused by the variation in the content of the commitments, which might affect their adaptiveness (Klimstra & Denissen, 2017). For example, being strongly committed to a job that is experienced

as highly stressful is likely not protective. Furthermore, commitments are a key component of influential models on identity formation, but the degree to which commitments are being explored and reconsidered is also important (Crocetti et al., 2008). Perhaps strong commitments do protect against developing depressive symptoms after exposure to stressful life events, but only if they have been thoroughly explored and are not being reconsidered. Such an identity formation profile can be captured by the identity status approach (Marcia, 1966; Meeus et al., 2010). Focusing on the content of commitments and on the combination with other identity dimensions might be valuable approaches for future research on the buffering role of identity.

Identity Domains

Although depressive symptoms and stressful life events did not consistently predict a relative weakening of one domain-specific identity commitment across studies, the career domain was the only domain that relatively weakened after these difficult experiences. That is, relative changes in interpersonal commitment strength were not predicted by depressive symptoms or stressful life events. Accordingly, previous findings indicate that internalizing symptoms are more strongly associated with commitments related to the career domain than with commitments related to the interpersonal domain (Clancy & Dollinger, 1993; Helsen et al., 1999). The current findings suggest that this difference may be caused by career commitments becoming relatively weaker after negative experiences, while interpersonal commitments remain relatively stable. During and after stress, young people might perceive their interpersonal relationships as increasingly important. They might turn to others for support (Ebata & Moos, 1991). In addition, having a supportive peer to rely on in times of distress could increase their appreciation of and commitment to this relationship (Updegraff & Taylor, 2000). Thus, interpersonal identity might be generally more salient to young people in distress than career identity. Therefore, a depletion of resources might be more harmful to career commitments, as remaining resources would be invested in the more salient interpersonal commitments, to the detriment of career commitments.

Although we had no hypothesis about a difference between the two identity domains' predictive power, career commitment was in both studies significantly related to a relative decrease in stressful life events while interpersonal commitment was not. A probable explanation for this could be that an interpersonal commitment can also entail committing to peers who take many risks (e.g., someone who uses drugs, drinks a lot of alcohol, or drives under influence). Committing to a risk-taking peer might result in more stressful events happening to a peer, and can increase young people's own risk behavior (Cohen & Prinstein, 2006). Because of

the greater potential heterogeneity in effects that peers may exert relative to the career domain, interpersonal commitments in general could be less predictive of stressful life events than career commitments.

Identity Commitments in Adolescence and Young Adulthood

A final hypothesis was that identity commitments would become more influential with age, because it becomes increasingly important to figure out which adult roles to prepare for and commit to (Erikson, 1968). Previous findings showed that commitments became more strongly concurrently associated with depressive symptoms with age (Luyckx et al., 2013; Meeus et al., 1999). In both present studies, we found no age differences (i.e., no differences between cohorts, and no differences across measurement occasions) in the strength of commitments' predictive effects on depressive symptoms and stressful life events. This indicates that previously found age differences in the concurrent association cannot be explained by age differences in commitments' predictive effects.

Strengths and Limitations

A strength of the present research is the inclusion of two longitudinal studies spanning 8 and 6 years. In Study 2, we were able to conceptually replicate several findings of Study 1, such as the associations of stronger career commitments with relative decreases in stressful life events. Another strength is the inclusion of both the period of adolescence and young adulthood. Both periods are highly important for identity formation (Arnett, 2000; Erikson, 1968), and with our focus on both of them we have shown that weak identity commitments might be a risk for more negative experiences across both periods.

There were, however, also limitations that need to be acknowledged. First, the examined career and interpersonal commitments consisted of two more specific commitments: commitment to education and work and to a best friend and romantic partner. Both examined domains are salient for the majority of young people (Kroger, 1986; Skorikov & Vondracek, 2011). However, within these broad domains the specific life stage appropriate commitments change during development, such as from education to work. Moreover, while for some young people education is still relevant, for another same-aged person this might already be work. By including two specific commitments within broader domains, it was possible to examine commitments' role across adolescence and young adulthood. Although the specific commitments within a domain are expected to be closely linked (Erikson, 1968; Negru-Subtirica et al., 2017), associations with depressive symptoms and stressful life events could differ between these more specific commitments.

Second, we have only investigated identity commitments, and no other dimensions through which these commitments are expected to be formed, like in-

depth exploration and reconsideration (Crocetti et al., 2008). Extending the examination of the role of identity in depressive symptoms and stressful life events with these dimensions in future studies can indicate more clearly when identity is predictive (e.g., especially strong commitments that are not reconsidered predict less negative experiences), and how identity formation is affected (e.g., negative experiences might result in more reconsideration, resulting in weaker commitments).

Last, the present studies focused on the between-person level of analysis. Studies at the between-person level show which individuals are at risk for a relative increase. Such findings are of importance to detect particular subgroups of young people that are more at risk for experiencing higher levels of depressive symptoms or more stressful life events than their peers. However, our findings do, for example, not directly indicate that one individual with a weaker commitment will experience an increase in depressive symptoms in the following years at the within-person level (Hamaker, Kuiper, & Grasman, 2015).

CONCLUSION

The findings of the present studies connect well with previous research that showed that strong identity commitments are associated with adolescents' and young adults' positive well-being. Moreover, the present studies contribute to the literature on the role of identity commitments in several ways. First, our findings indicate that commitments are predictive of negative experiences. Specifically, stronger interpersonal commitments predicted a relative decline in depressive symptoms across the next 3 years, and stronger career commitments were predictive of experiencing relatively fewer stressful life events. Second, our findings indicate that negative experiences more strongly predicted young people's career commitments than their interpersonal commitments. This difference could be caused by the importance of relationships during difficult times, because they might be a source of support. Therefore, young people that experience difficulties might still invest in maintaining strong interpersonal commitments, while their career commitments relatively weaken. Third, our findings did not show support for a buffering role of stronger identity commitments. Only having stronger interpersonal or career commitments does not seem to make young people more resilient to the negative impact of stressful life events. Young people's identity commitments are likely more directly linked to negative experiences. This study thereby underscores the importance of identity commitments in adolescence and young adulthood, and provides crucial nuances in the distinct links of career and interpersonal commitments with negative experiences.

SUPPLEMENTAL MATERIALS

Strategy of Analysis

The model, shown in Figure S5.1, was estimated with a Full Information Robust Maximum Likelihood estimator for reasons of non-normally distributed variables in Mplus 7 (Muthén & Muthén, 1998-2015). The model fit was assessed using the Comparative Fit Index (CFI), with values above 0.90 indicative of acceptable fit and values above 0.95 indicative of good model fit, and the Root Mean Square Error of Approximation (RMSEA), with values below 0.08 representing acceptable model fit and values below 0.05 representing good fit (Byrne, 2013). We tested whether each of the cross-lagged effects, correlated relative changes, and interaction effects were invariant across time. Specifically, we tested whether each pair of parameters (indicated by similar labels in Figure S5.1) could be constrained to be time invariant without significantly worsening the model fit. For example, we tested whether the cross-lagged effect of depressive symptoms at T1 predicting career commitment at T2 could be constrained to be equal to the cross-lagged effect of depressive symptoms at T2 predicting career commitments at T3. If two of the following three criteria were met, we concluded that there was a significant reduction in model fit: $\Delta\chi^2_{SB}$ significant at < 0.050, ΔCFI > -0.010, and ΔRMSEA > 0.015 (Chen, 2007; Cheung & Rensvold, 2002).

To examine our hypotheses, we primarily focused on the cross-lagged effects predicting relative change and the correlated relative changes, as indicated in Figure S5.1. To examine the hypothesis that commitments become more predictive with age, we used a multi-group analysis comparing the younger (early-to-late adolescent) to the older (middle adolescent-to-young adult) subsample. We tested whether each of the cross-lagged effects of interpersonal and career commitment predicting relative changes in depressive symptoms and stressful life events (i.e., cross-lagged effects 1 and 3 in Figure S5.1) could be constrained to be equal between the two subsamples. If no significant reduction in model fit occurred, following the same criteria as for time invariance testing, invariance across the subsamples was concluded. Furthermore, we checked whether cross-lagged effects between career or interpersonal commitment and stressful life events were not solely driven by events directly associated with that specific identity domain. This was done by testing whether significant cross-lagged effects between domain-specific commitments and stressful life events remained significant if events that occurred in the same domain were left out. Lastly, to examine the hypothesis that career commitment would weaken more when experiencing depressive symptoms or stressful life events, compared with interpersonal commitment, we examined the 95% confidence intervals of the standardized estimates of these cross-lagged effects

(i.e., cross-lagged effect 1c vs. 1i and 4c vs. 4i in Figure S5.1) in case at least one of them was significant. If the overlap on one side of the confidence interval (i.e., one confidence interval "arm") was less than 50%, we concluded that there was a significant difference (Cumming, 2009).

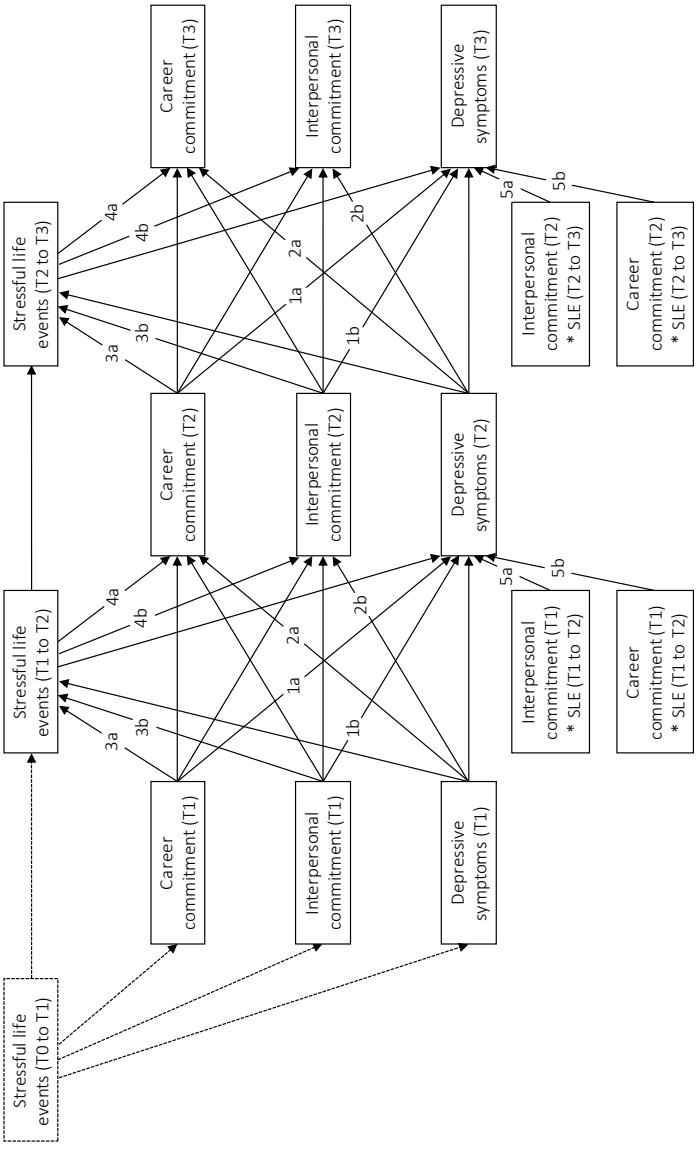

Figure S5.1 | Analyzed model. Labeled cross-lagged effects and correlated relative changes were focused on to test the hypotheses: 1 and 2 for the expected associations between commitment and depressive symptoms over time; 3 and 4 for the expected associations between commitment and stressful life events over time; 5 for the expected buffering effect of commitment. The labels c and i refer to associations including either career or interpersonal commitment, respectively. For reasons of clarity the correlations between career and interpersonal commitment at all waves are omitted from this figure. SLE = stressful life events.
* In Study 1, the variable stressful life events between T0 and T1 was not part of the model. As we focused on cross-lagged effects that predict relative change in a variable, we focused in this study on the cross-lagged effect across T2 and T3 for 3i and 3c.

Table S5.1 | Descriptive Statistics and Relative Stability of Career and Interpersonal Commitments, Depressive Symptoms, and Stressful Life Events in Study 1

	T1			T2			T3			Relative stability	
	n	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	T1–T2	T2–T3
Early-to-late adolescent subsample											
Career commitment	656	3.72	0.78	679	35.1.60	0.71	672	3.70	0.72	.17***	.28***
Interpersonal commitment	655	3.49	0.81	679	3.71	0.72	667	3.74	0.68	.19***	.44***
Depressive symptoms	656	1.17	0.27	680	1.18	0.22	673	1.13	0.19	.28***	.50***
Stressful life events				683	1.10	1.17	683	2.57	1.82		.15***
Middle adolescent-to-young adult subsample											
Career commitment	267	3.65	0.72	260	3.71	0.65	261	3.74	0.67	.11	.22***
Interpersonal commitment	261	3.41	0.65	258	3.72	0.61	257	3.72	0.57	.20**	.41***
Depressive symptoms	267	1.23	0.27	262	1.16	0.20	260	1.14	0.20	.42***	.57***
Stressful life events				268	1.72	1.50	268	2.07	1.60		.13*

Note. For stressful life events, T refers to the events taking place between T-1T and T (e.g., T2 = between T1 and T2).
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table S5.2 | Correlations Between Career Commitment, Interpersonal Commitment, Depressive Symptoms, and Stressful Life Events in Study 1

	Career commitment			Interpersonal commitment			Depressive symptoms		
	T1	T2	T3	T1	T2	T3	T1	T2	T3
Early-to-late adolescent subsample									
Depressive symptoms T1	-.13***	-.07	-.05	-.02	.00	.01			
Depressive symptoms T2	-.06	-.26***	-.13**	-.03	-.13***	-.05			
Depressive symptoms T3	.00	-.14***	-.18***	-.01	-.07	-.07			
Stressful life events T1-T2	.02	.00	.00	-.01	.03	.04	-.04	.03	.03
Stressful life events T2-T3	-.01	-.06	-.05	-.06	.07	.03	.05	.08*	.10**
Middle adolescent-to-young adult subsample									
Depressive symptoms T1	-.14*	-.13*	-.13*	.02	-.03	-.06			
Depressive symptoms T2	-.21***	-.23***	-.26***	-.06	-.07	-.03			
Depressive symptoms T3	-.10	-.14*	-.36***	-.07	-.16*	-.16*			
Stressful life events T1-T2	-.14*	.01	.00	-.10	.08	.05	-.04	-.03	.03
Stressful life events T2-T3	.01	-.14*	-.12	.08	-.07	-.12	.09	.16*	.15*

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table S5.3 | Parameter Estimates of the Time Invariant Analyzed Models on Career and Interpersonal Commitments, Depressive Symptoms, and Stressful Life Events of Study 1 and 2

	Study 1		Study 2	
Parameter	β	*p*	β	*p*
3 or 4-year stability paths				
Career commitment T1 → Career commitment T2	.13	<.001	.24	<.001
Career commitment T2 → Career commitment T3	.24	<.001	.32	<.001
Interpersonal commitment T1 → Interpersonal commitment T2	.19	<.001	.47	<.001
Interpersonal commitment T3 → Interpersonal commitment T3	.42	<.001	.46	<.001
Depressive symptoms T1 → Depressive symptoms T2	.32	<.001	.30	<.001
Depressive symptoms T2 → Depressive symptoms T3	.49	<.001	.32	<.001
SLE T0 to T1 → SLE T1 to T2	N/A	N/A	.32	<.001
SLE T1 to T2 → SLE T2 to T3	.11	.002	.32	<.001
Cross-lagged effects				
Depressive symptoms T1 → Career commitment T2	-.08	.002	-.03	.125
Depressive symptoms T2 → Career commitment T3	-.06	.002	-.03	.125
Career commitment T1 → Depressive symptoms T2	-.02	.489	-.03	.187
Career commitment T2 → Depressive symptoms T3	-.02	.489	-.03	.187
Depressive symptoms T1 → Interpersonal commitment T2	.01	.745	.03	.104
Depressive symptoms T2 → Interpersonal commitment T3	.01	.745	.03	.104
Interpersonal commitment T1 → Depressive symptoms T2	-.03	.177	-.04	.036
Interpersonal commitment T2 → Depressive symptoms T3	-.03	.177	-.04	.036
SLE T0 to T1 → Career commitment T1	N/A	N/A	-.06	.011
SLE T1 to T2 → Career commitment T2	-.01	.503	-.10	<.001
SLE T2 to T3 → Career commitment T3	-.02	.503	-.11	<.001
Career commitment T1 → SLE T1 to T2	-.03	.454	-.06	.006
Career commitment T2 → SLE T2 to T3	-.08	.035	-.05	.006
SLE T0 to T1 → Interpersonal commitment T1	N/A	N/A	.14	<.001
SLE T1 to T2 → Interpersonal commitment T2	.01	.566	.00	.803
SLE T2 to T3 → Interpersonal commitment T3	.01	.566	.00	.803
Interpersonal commitment T1 → SLE T1 to T2	-.03	.392	.01	.673
Interpersonal commitment T2 → SLE T2 to T3	.06	.066	.01	.673
SLE T0 to T1 → Depressive symptoms T1	N/A	N/A	.12	<.001
SLE T1 to T2 → Depressive symptoms T2	.03	.086	.13	<.001
SLE T2 to T3 → Depressive symptoms T3	.05	.086	.15	<.001
Depressive symptoms T1 → SLE T1 to T2	-.02	.451	.08	<.001
Depressive symptoms T2 → SLE T2 to T3	.09	.013	.08	<.001
Career commitment T1 → Interpersonal commitment T2	.05	.058	.08	<.001
Career commitment T2 → Interpersonal commitment T3	.05	.058	.08	<.001
Interpersonal commitment T1 → Career commitment T2	.04	.204	.07	.001
Interpersonal commitment T2 → Career commitment T3	.03	.204	.07	.001

Table S5.3 Continued

Parameter	Study 1 β	Study 1 *p*	Study 2 β	Study 2 *p*
Interaction effects				
Career commitment T1 * SLE T1 to T2 → Depressive symptoms T2	-.02	.352	.02	.183
Career commitment T2 * SLE T2 to T3 → Depressive symptoms T3	-.03	.352	.03	.183
Interpersonal commitment T1 * SLE T1 to T2 → Depressive symptoms T2	-.01	.459	.00	.908
Interpersonal commitment T2 * SLE T2 to T3 → Depressive symptoms T3	-.02	.459	.00	.908
	r	*p*	*r*	*p*
Correlated residuals				
Career commitment T1 – Depressive symptoms T1	-.14	.002	-.17	<.001
Career commitment T2 – Depressive symptoms T2	-.19	<.001	-.16	<.001
Career commitment T3 – Depressive symptoms T3	-.23	<.001	-.18	<.001
Interpersonal commitment T1 – Depressive symptoms T1	-.01	.722	-.01	.715
Interpersonal commitment T2 – Depressive symptoms T2	-.08	<.001	-.06	.001
Interpersonal commitment T3 – Depressive symptoms T3	-.11	<.001	-.06	.001
Career commitment T1 – Interpersonal commitment T1	.35	<.001	.29	<.001
Career commitment T2 – Interpersonal commitment T2	.23	<.001	.13	<.001
Career commitment T3 – Interpersonal commitment T3	.26	<.001	.14	<.001

Note. SLE = stressful life events.

Table S5.4 | Descriptive Statistics and Relative Stability of Career and Interpersonal Commitments, Depressive Symptoms, and Stressful Life Events in Study 2

	T1			T2			T3			Relative stability	
	n	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	T1–T2	T2–T3
Adolescent subsample											
Career commitment	939	3.44	0.71	929	3.57	0.63	645	3.67	0.61	.28***	.33***
Interpersonal commitment	892	3.33	0.80	923	3.60	0.72	637	3.78	0.73	.39***	.38***
Depressive symptoms	944	1.33	0.53	945	1.41	0.59	659	1.36	0.56	.30***	.36***
Stressful life events	954	1.44	1.42	948	1.70	1.63	655	1.89	1.75	.29***	.35***
Young adult subsample											
Career commitment	869	3.58	0.66	857	3.54	0.68	591	3.59	0.62	.26***	.35***
Interpersonal commitment	890	3.83	0.78	908	3.93	0.73	615	3.93	0.73	.52***	.54***
Depressive symptoms	919	1.38	0.58	935	1.37	0.54	637	1.33	0.53	.35***	.32***
Stressful life events	937	2.06	1.78	931	2.01	1.72	636	1.84	1.81	.35***	.31***

Note. For stressful life events, T refers to the events taking place between T-1T and T (e.g., T1 = between T0 and T1).
*** $p < .001$.

Table S5.5 | Correlations Between Career Commitment, Interpersonal Commitment, Depressive Symptoms, and Stressful Life Events in Study 2

	Career commitment			Interpersonal commitment			Depressive symptoms		
	T1	T2	T3	T1	T2	T3	T1	T2	T3
Adolescent subsample									
Depressive symptoms T1	-.13***	-.11**	-.02	.09**	.05	-.02			
Depressive symptoms T2	-.11***	-.23***	-.10**	.03	-.01	.00			
Depressive symptoms T3	-.11**	-.13***	-.15***	.02	-.05	-.07			
Stressful life events T0-T1	-.01	-.06	.02	.15***	.06	.03	.15***	.08*	.03
Stressful life events T1-T2	-.05	-.06	-.04	.06	.05	.07	.14***	.16***	.09*
Stressful life events T2-T3	-.01	-.01	-.12**	.05	.03	-.01	.13**	.07	.16***
Young adult subsample									
Depressive symptoms T1	-.23***	-.07*	-.14**	-.09**	.00	.05			
Depressive symptoms T2	-.08*	-.25***	-.08*	-.10**	-.13***	-.11**			
Depressive symptoms T3	-.19***	-.08	-.16***	-.03	-.06	-.05			
Stressful life events T0-T1	-.15***	-.12***	-.13**	.05	.01	-.02	.08*	.13***	.14***
Stressful life events T1-T2	-.13***	-.19***	-.06	-.05	-.05	-.04	.12***	.24***	.05
Stressful life events T2-T3	-.14***	-.20***	-.11**	-.05	-.04	-.04	.11**	.19***	.15***

* $p < .05$. ** $p < .01$. *** $p < .001$.

REFERENCES

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.

American Psychological Association. (2010). *Ethical principles of psychologists and code of conduct.* Retrieved from http://apa.org/ethics/code/index.aspx

Anthis, K. S. (2002). On the calamity theory of growth: The relationship between stressful life events and changes in identity over time. *Identity, 2*, 229-240. doi:10.1207/s1532706xid0203_03

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*, 469-480. doi:10.1037/0003-066x.55.5.469

Bollen, K. A. (2014). *Structural equations with latent variables*. New York, NY: Wiley.

Branje, S., Laninga-Wijnen, L., Yu, R., & Meeus, W. (2014). Associations among school and friendship identity in adolescence and romantic relationships and work in emerging adulthood. *Emerging Adulthood, 2*, 6-16. doi:10.1177/2167696813515851

Brown, B. B. (2004). Adolescents' relationships with peers. In R. M. Lerner & S. L. (Eds.), *Handbook of adolescent psychology*. Hoboken, NJ: Wiley.

Byrne, B. M. (2013). *Structural equation modeling with Mplus: Basic concepts, applications, and programming*. New York, NY: Routledge.

Caspi, A., Moffitt, T., Thornton, A., Freedman, D., Amell, J., Harrington, H., . . . Silva, P. H. (1996). The Life History Calendar: A research and clinical assessment method for collecting retrospective event-history data. *International Journal of Methods in Psychiatric Research, 6*, 101-114. doi:10.1002/(SICI)1234-988X(199607)6:23.3.CO;2-E

Chavez-Korell, S., & Torres, L. (2014). Perceived stress and depressive symptoms among Latino adults: The moderating role of ethnic identity cluster patterns. *The Counseling Psychologist, 42*, 230-254. doi:10.1177/0011000013477905

Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal, 14*, 464-504. doi:10.1080/10705510701301834

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal, 9*, 233-255. doi:10.1207/S15328007SEM0902_5

Clancy, S. M., & Dollinger, S. J. (1993). Identity, self, and personality: I. Identity status and the five-factor model of personality. *Journal of Research on Adolescence, 3*, 227-245. doi:10.1207/s15327795jra0303_2

Cohen, G. L., & Prinstein, M. J. (2006). Peer contagion of aggression and health risk behavior among adolescent males: An experimental investigation of effects on public conduct and private attitudes. *Child Development, 77*, 967-983. doi:10.1111/j.1467-8624.2006.00913.x

Cole, D. A., Nolen-Hoeksema, S., Girgus, J., & Paul, G. (2006). Stress exposure and stress generation in child and adolescent depression: A latent trait-state-error approach to longitudinal analyses. *Journal of Abnormal Psychology, 115*, 40-51. doi:10.1037/0021-843X.115.1.40

Compas, B. E. (1987). Stress and life events during childhood and adolescence. *Clinical Psychology Review, 7*, 275-302. doi:10.1016/0272-7358(87)90037-7

Côté, J. E. (1996). Sociological perspectives on identity formation: The culture–identity link and identity capital. *Journal of Adolescence, 19*, 417-428. doi:10.1006/jado.1996.0040

Crocetti, E., Branje, S., Rubini, M., Koot, H. M., & Meeus, W. (2017). Identity processes and parent-child and sibling relationships in adolescence: A five-wave multi-informant longitudinal study. *Child Development, 88*, 210-228. doi:10.1111/cdev.12547

Crocetti, E., Rubini, M., & Meeus, W. (2008). Capturing the dynamics of identity formation in various ethnic groups: Development and validation of a three-dimensional model. *Journal of Adolescence, 31*, 207-222. doi:10.1016/j.adolescence.2007.09.002

Cumming, G. (2009). Inference by eye: Reading the overlap of independent confidence intervals. *Statistics in Medicine, 28*, 205-220. doi:10.1002/sim.3471

Ebata, A. T., & Moos, R. H. (1991). Coping and adjustment in distressed and healthy adolescents. *Journal of Applied Developmental Psychology, 12*, 33-54. doi:10.1016/0193-3973(91)90029-4

Erikson, E. H. (1968). *Identity: Youth and crisis*. New York, NY: Norton.

Frankl, V. E. (1985). *Man's search for meaning*. New York, NY: Simon and Schuster.

Goldberg, D. P. (1978). *Manual of the General Health Questionnaire*. Horsham, United Kingdom: General Practice Research Unit.

Grotevant, H. D. (1987). Toward a process model of identity formation. *Journal of Adolescent Research, 2*, 203-222. doi:10.1177/074355488723003

Grotevant, H. D., & Adams, G. R. (1984). Development of an objective measure to assess ego identity in adolescence: Validation and replication. *Journal of Youth and Adolescence, 13*, 419-438. doi:10.1007/BF02088639

Grotevant, H. D., Thorbecke, W., & Meyer, M. L. (1982). An extension of Marcia's Identity Status Interview into the interpersonal domain. *Journal of Youth and Adolescence, 11*, 33-47. doi:10.1007/BF01537815

Hamaker, E. L., Kuiper, R. M., & Grasman, R. P. P. P. (2015). A critique of the cross-lagged panel model. *Psychological Methods, 20*, 102-116. doi:10.1037/a0038889

Hankin, B. J., & Abramson, L. Y. (2001). Development of gender differences in depression: An elaborated cognitive vulnerability-transactional stress theory. *Psychological Bulletin, 127*, 773-796. doi:10.1O37//O033-29O9.127.6.773

Helsen, M., Vollebergh, W., & Meeus, W. (1999). Psychosociale problemen in de adolescentie: De samenhang met hechting aan ouders en vrienden en identiteit. *Nederlands Tijdschrift voor de Psychologie en haar Grensgebieden, 54*, 256-275.

Holmes, T. H., & Rahe, R. H. (1967). The social readjustment rating scale. *Journal of Psychosomatic Research, 11*, 213-218. doi:10.1016/0022-3999(67)90010-4

Holsen, I., & Birkeland, M. S. (2017). Course, predictors, and outcomes of depressed mood in a cohort of norwegian adolescents followed from age 13 into adulthood age 30. *Emerging Adulthood, 5*, 3-15. doi:10.1177/2167696816635810

Klimstra, T. A., & Denissen, J. J. A. (2017). A theoretical framework for the associations between identity and psychopathology. *Developmental Psychology*, 53, 2052-2065. doi:10.1037/dev0000356

Klimstra, T. A., Luyckx, K., Branje, S., Teppers, E., Goossens, L., & Meeus, W. H. (2013). Personality traits, interpersonal identity, and relationship stability: Longitudinal linkages in late adolescence and young adulthood. *Journal of Youth and Adolescence, 42*, 1661-1673. doi:10.1007/s10964-012-9862-8

Koepke, S., & Denissen, J. J. A. (2012). Dynamics of identity development and separation–individuation in parent–child relationships during adolescence and emerging adulthood: A conceptual integration. *Developmental Review, 32*, 67-88. doi:10.1016/j.dr.2012.01.001

Kovacs, M. (1985). The Children's Depression Inventory (CDI). *Psychopharmacology Bulletin, 21*, 995-998.

Kroger, J. (1986). The relative importance of identity status interview components: Replication and extension. *Journal of Adolescence, 9*, 337-354. doi:10.1016/s0140-1971(86)80040-9

Kroger, J., & Green, K. E. (1996). Events associated with identity status change. *Journal of Adolescence, 19*, 477-490. doi:10.1006/jado.1996.0045

Little, R. J. A. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association, 83*, 1198-1202. doi:10.1080/01621459.1988.10478722

Liu, R. T., & Alloy, L. B. (2010). Stress generation in depression: A systematic review of the empirical literature and recommendations for future study. *Clinical Psychology Review, 30*, 582-593. doi:10.1016/j.cpr.2010.04.010

Lüdtke, O., Roberts, B. W., Trautwein, U., & Nagy, G. (2011). A random walk down university avenue: Life paths, life events, and personality trait change at the transition to university life. *Journal of Personality and Social Psychology, 101*, 620-637. doi:10.1037/a0023743

Luyckx, K., Goossens, L., Soenens, B., & Beyers, W. (2006). Unpacking commitment and exploration: Preliminary validation of an integrative model of late adolescent identity formation. *Journal of Adolescence, 29*, 361-378. doi:10.1016/j.adolescence.2005.03.008

Luyckx, K., Klimstra, T. A., Duriez, B., Van Petegem, S., & Beyers, W. (2013). Personal identity processes from adolescence through the late 20s: Age trends, functionality, and depressive symptoms. *Social Development, 22*, 701-721. doi:10.1111/sode.12027

Luyckx, K., Seiffge-Krenke, I., Schwartz, S. J., Goossens, L., Weets, I., Hendrieckx, C., & Groven, C. (2008). Identity development, coping, and adjustment in emerging adults with a chronic illness: The sample case of type 1 diabetes. *Journal of Adolescent Health, 43*, 451-458. doi:10.1016/j.jadohealth.2008.04.005

Luyckx, K., Soenens, B., Goossens, L., & Vansteenkiste, M. (2007). Parenting, identity formation, and college adjustment: A mediation model with longitudinal data. *Identity, 7*, 309-330. doi:10.1080/15283480701600785

Marcia, J. E. (1966). Development and validation of ego-identity status. *Journal of Personality and Social Psychology, 3*, 551-558. doi:10.1037/h0023281
Meeus, W. (1996). Studies on identity development in adolescence: An overview of research and some new data. *Journal of Youth and Adolescence, 25*, 569-598. doi:10.1007/bf01537355
Meeus, W. (2009). *Life History Calendar, revised and adapted Dutch version*. Unpublished manuscript, Adolescent Development, Utrecht University, Utrecht, the Netherlands.
Meeus, W. (2011). The study of adolescent identity formation 2000-2010: A review of longitudinal research. *Journal of Research on Adolescence, 21*, 75-94. doi:10.1111/j.1532-7795.2010.00716.x
Meeus, W. (2016). Adolescent psychosocial development: A review of longitudinal models and research. *Developmental Psychology, 52*, 1969-1993. doi:10.1037/dev0000243
Meeus, W., & 't Hart, H. (1993). *Jongeren in Nederland [Young people in the Netherlands].* Amersfoort, the Netherlands: Academische uitgeverij.
Meeus, W., Iedema, J., Helsen, M., & Vollebergh, W. (1999). Patterns of adolescent identity development: Review of literature and longitudinal analysis. *Developmental Review, 19*, 419-461. doi:10.1006/drev.1999.0483
Meeus, W., Van de Schoot, R., Keijsers, L., Schwartz, S. J., & Branje, S. (2010). On the progression and stability of adolescent identity formation: A five-wave longitudinal study in early-to-middle and middle-to-late adolescence. *Child Development, 81*, 1565-1581. doi:10.1111/j.1467-8624.2010.01492.x
Mueller, D. P., Edwards, D. W., & Yarvis, R. M. (1977). Stressful life events and psychiatric symptomatology: Change or undesirability? *Journal of Health and Social Behavior, 18*, 307-317. doi:10.2307/2136356
Muthén, L. K., & Muthén, B. O. (1998-2015). Mplus User's Guide. Seventh Edition. Los Angeles, CA: Muthén & Muthén.
Negru-Subtirica, O., Pop, E. I., & Crocetti, E. (2017). Good omens? The intricate relations between educational and vocational identity in adolescence. *European Journal of Developmental Psychology*, 1-16. doi:10.1080/17405629.2017.1313160
Negru-Subtirica, O., Pop, E. I., Luyckx, K., Dezutter, J., & Steger, M. F. (2016). The meaningful identity: A longitudinal look at the interplay between identity and meaning in life in adolescence. *Developmental Psychology, 52*, 1926-1936. doi:10.1037/dev0000176
Pine, D. S., Cohen, P., Johnson, J., & Brook, J. S. (2002). Adolescent life events as predictors of adult depression. *Journal of Affective Disorders, 68*, 49-57. doi:10.1016/S0165-0327(00)00331-1
Raphael, K. G., Cloitre, M., & Dohrenwend, B. P. (1991). Problems of recall and misclassification with checklist methods of measuring stressful life events. *Health Psychology, 10*, 62-74. doi:10.1037/0278-6133.10.1.62
Roberts, B. W., O'Donnell, M., & Robins, R. W. (2004). Goal and personality trait development in emerging adulthood. *Journal of Personality and Social Psychology, 87*, 541-550. doi:10.1037/0022-3514.87.4.541
Roelofs, J., Braet, C., Rood, L., Timbremont, B., van Vlierberghe, L., Goossens, L., & van Breukelen, G. (2010). Norms and screening utility of the Dutch version of the Children's Depression Inventory in clinical and nonclinical youths. *Psychological Assessment, 22*, 866-877. doi:10.1037/a0020593
Schwartz, S. J., Beyers, W., Luyckx, K., Soenens, B., Zamboanga, B. L., Forthun, L. F., . . . Waterman, A. S. (2011). Examining the light and dark sides of emerging adults' identity: A study of identity status differences in positive and negative psychosocial functioning. *Journal of Youth and Adolescence, 40*, 839-859. doi:10.1007/s10964-010-9606-6
Schwartz, S. J., Klimstra, T. A., Luyckx, K., Hale, W. W., 3rd, & Meeus, W. H. (2012). Characterizing the self-system over time in adolescence: Internal structure and associations with internalizing symptoms. *Journal of Youth and Adolescence, 41*, 1208-1225. doi:10.1007/s10964-012-9751-1
Skorikov, V. B., & Vondracek, F. W. (2011). Occupational identity. In S. J. Schwartz, K. Luyckx, & V. L. Vignoles (Eds.), *Handbook of identity theory and research* (pp. 693-714). New York, NY: Springer.
Swearingen, E. M., & Cohen, L. H. (1985). Measurement of adolescents' life events: The junior high life experiences survey. *American Journal of Community Psychology, 13*, 69-85. doi:10.1007/BF00923260
't Hart, H. (1992). *Opzet en uitvoering van het WIL-panel 1 en 2 [Design and data-collection of the Utrecht Study of Adolescent Development 1 and 2].* Unpublished manuscript, Utrecht University, the Netherlands.
Thoits, P. A. (1983). Multiple identities and psychological well-being: A reformulation and test of the social isolation hypothesis. *American Sociological Review, 48*, 174-187. doi:10.2307/2095103

Updegraff, J. A., & Taylor, S. E. (2000). From vulnerability to growth: Positive and negative effects of stressful life events. In J. Harvey & E. Miller (Eds.), *Loss and trauma: General and close relationship perspectives* (pp. 3-28). Philadelphia, PA: Brunner-Routledge.

Van Doeselaar, L., Meeus, W., Koot, H. M., & Branje, S. (2016). The role of best friends in educational identity formation in adolescence. *Journal of Adolescence, 47*, 28-37. doi:10.1016/j.adolescence.2015.12.002

CHAPTER 6 –

The Role of Best Friends in Educational Identity Formation in Adolescence

Van Doeselaar, L., Meeus, W., Koot, H. M., & Branje, S. (2016). The role of best friends in educational identity formation in adolescence. *Journal of Adolescence, 47,* 28-37. https://doi.org/10.1016/j.adolescence.2015.12.002

* This paper is based on my thesis for the Research Master "Development and Socialisation in Childhood and Adolescence" at Utrecht University.

ABSTRACT

This 4-year longitudinal study examined over-time associations between adolescents' educational identity, perceived best friends' balanced relatedness, and best friends' educational identity. Adolescents (N = 464, M_{age} = 14.0 years at baseline, 56.0% males, living in the Netherlands) and their self-nominated best friends reported on their educational commitment, in-depth exploration, and reconsideration. Target adolescents also reported on the level of balanced relatedness provided by their best friend. Cross-lagged panel models showed that balanced relatedness significantly predicted adolescents' reconsideration, and was predicted by in-depth exploration and, in an inconsistent pattern, by commitment. Best friends' educational identity did not positively predict adolescents' educational identity. Perceiving a best friend as high on balanced relatedness seems to reduce adolescents' problematic educational reconsideration, while, in turn, adaptive educational identity processes might foster balanced relatedness.

INTRODUCTION

One of the main developmental tasks adolescents in Western societies face is the formation of a coherent sense of identity (Baumeister & Muraven, 1996). An important domain in which adolescents construct their identity is education. Adolescents often have to choose schools, specific educational levels or tracks, and curricula. These choices not only affect their future vocational pathways, but also their interests and social position. Adolescents' friendships are thought to be related to this development of educational identity. During adolescence, friends show increasing respect for each other's needs and opinions (Shulman & Knafo, 1997). These developments in adolescent educational identity and friendships might positively influence each other (McLean & Jennings, 2012). Erikson (1968) already stated that identity is constructed within social interaction, and that a coherent identity is necessary to develop intimate friendships. Current cross-sectional studies support this interdependence between the developmental domains of identity and friendships (Doumen et al., 2012; Johnson, 2012). However, longitudinal studies on the links between friendship and identity formation are rare (cf. Dumas, 2011; Reis & Youniss, 2004). The present longitudinal study examined whether adolescents' educational identity is associated over time with their perception of the level of balanced relatedness provided by their best friend and with their best friend's educational identity.

Identity Formation

According to the Meeus-Crocetti model, which builds on Marcia's (1966) identity status paradigm, identity develops in a continuous interplay between making commitments, exploring commitments in-depth, and reconsidering commitments (Crocetti, Rubini, & Meeus, 2008; Meeus, Van de Schoot, Keijsers, Schwartz, & Branje, 2010). *Commitment* refers to making firm choices with regard to various domains and the self-confidence derived from these choices. *In-depth exploration* represents the extent to which present commitments are actively explored. It involves searching for information about these commitments, reflecting on one's choices, and discussing them with others. Finally, *reconsideration of commitment* refers to the willingness to discard one's present commitments and to search for alternative commitments. Commitment and in-depth exploration are generally thought to be adaptive processes, whereas reconsideration is thought to reflect the crisis-like aspect of identity formation (Crocetti, Rubini, & Meeus, 2008).

Adolescents' educational identity development is expected to be triggered by several institutionalized moments of choice (Kalakoski & Nurmi, 1998), such as choices regarding educational tracks or specific curricula during secondary education, and the choice for a major when entering tertiary education. The

educational system expects adolescents to explore and to be committed to their educational choices. However, some adolescents might doubt whether their educational choices fit their needs. This could result in lower educational commitment and increased reconsideration, and might worsen their psychological well-being, academic adjustment, and later work identity (Branje, Laninga-Wijnen, Yu, & Meeus, 2014; Luyckx, Soenens, Goossens, & Vansteenkiste, 2007; Meeus, Iedema, Helsen, & Vollebergh, 1999). Therefore, it is important to examine factors that relate to interindividual differences in adolescents' educational identity.

Interindividual differences in identity partly result from the interpersonal contexts in which identity is developed (Bosma & Kunnen, 2001; Erikson, 1968). Intimate friendships are thought to form a safe interpersonal context for adolescents' identity development (McLean & Jennings, 2012). By talking to friends about lived experiences, adolescents are thought to be able to integrate these experiences within their identity (McLean & Pasupathi, 2010). It is theorized that during this process friends provide support and feedback, which might influence adolescents' identity formation (Kerpelman, Pittman, & Lamke, 1997; Weeks & Pasupathi, 2010).

Friends' Balanced Relatedness

During adolescence, individuality becomes more and more accepted within friendships (Selfhout, Branje, & Meeus, 2009). Adolescents increasingly accept the opinions and ideas of their friend, even when they differ from their own. This characteristic of an intimate friendship is referred to as balanced relatedness (Shulman & Knafo, 1997). Specifically this aspect of adolescent friendships might be associated with identity development, because it encompasses the acceptance within the friendship of the individual as an autonomous, independent individual who has own ideas and needs. Friends who are perceived as higher on balanced relatedness might form a safer environment for educational identity formation, because adolescents expect it to be likely that this friend will tolerate their view (Thorne & Shapiro, 2011). Moreover, adolescents might feel supported in expressing personal views and in exploring and making their own educational choices. Findings from an earlier study indicated that peer groups open to and supportive of adolescents' opinions stimulate adolescents' general identity by relatively increasing in-depth exploration, but not commitment (Dumas, 2011). Although this prior study focused on the actual degree of balanced relatedness, adolescents' perceptions of balanced relatedness might have a stronger influence on their identity (Ryan, 2010).

In turn, adolescents' identity might affect the perceived level of balanced relatedness provided by their friend. The formation of a coherent identity is thought

to stimulate the development of intimate friendships, characterized by a high level of balanced relatedness, because there is less fear to lose the self in the friendship (Erikson, 1963). Adolescents who have constructed a relatively stable identity might feel more secure when expressing their views and be less likely to perceive their friend's reactions as confronting (Bauminger, Finzi-Dottan, Chason, & Har-Even, 2008). Therefore, adolescents with a more stable identity might experience an increase in the degree of perceived balanced relatedness provided by their friend. Our study examined whether the level of perceived balanced relatedness provided by best friends is reciprocally positively related over time to adolescents' educational identity.

Friends' Identity

Adolescents and their friends are facing the same developmental task of constructing their identity. Identity control theory suggests that adolescents' identity is influenced by the identity of their friend (Kerpelman et al., 1997). When friends narrate about their experiences they provide self-relevant feedback to each other on their identity choices. We suggest that this self-relevant feedback might contain information on how one should develop an educational identity, such as "you should be committed to your educational choice". This way, highly committed adolescents might stimulate their friend to commit as well. Identity control theory states that when one's identity is not in line with the feedback received from friends, adolescents will adjust their identity to restore the balance (Kerpelman et al., 1997). Consequently, the development of identity of both the adolescent and best friend will be shaped, and as a result, will become more similar over time.

In line with this perspective, friends were found to be more often in a similar state of general and domain-specific identity than random pairs (Akers, Jones, & Coyl, 1998). Specifically, adolescents who had low levels of both educational exploration and commitment were more similar in this respect to their friend than random pairs. However, adolescents who scored high on either educational exploration, educational commitment, or both, were not more equal to their friends' educational identity than random pairs. In another study, adolescents' peer group members' general commitment, but not their exploration, was found to play a role in adolescents' general identity over time (Dumas, 2011). Although these studies suggest that adolescents' identity is linked to their friends' identity, more research is needed on the over-time associations between friends' educational identities. Therefore, we examined whether adolescents' and their best friends' educational identities are positively associated with each other over time.

Stability of Friendships

Although friendships are increasingly stable across adolescence (Branje, Frijns, Finkenauer, Engels, & Meeus, 2007), there are quite some adolescents that change their best friends over the course of time. It is therefore important to distinguish the over-time influences that friends might have on each other from potential selection effects (Brechwald & Prinstein, 2011). For example, adolescents with a strong educational identity might prefer a new best friend who provides a higher level of balanced relatedness. Furthermore, when adolescents end their friendship it is likely that the perceived balanced relatedness and educational identity of this friend have less influence on the adolescent's educational identity. To disentangle the hypothesized influence effects from these distorting factors, we differentiated between stable and unstable friendships.

Present Study

In the present study, we examined whether adolescents' perceptions of the balanced relatedness provided by their best friends were reciprocally positively associated with adolescents' educational identity over time. Moreover, we examined whether adolescents' and best friends' educational commitment, in-depth exploration, and reconsideration were positively associated with each other over time.

METHOD

Participants

Participants were adolescents and their self-nominated best friends participating in the younger cohort of the longitudinal project 'Research on Adolescent Development and Relationships' (RADAR; Van Lier, Frijns, Neumann, Den Exter Blokland, Koot, & Meeus, 2008). RADAR is an ongoing Dutch population-based cohort study. In the total RADAR young cohort, 497 adolescents participated in six annual waves from 2006 to 2011. As the first wave did not contain information on identity, we used data from the second to the sixth wave (N = 486), in this paper referred to as T1 to T5. Because friendships are the focus of the present study, adolescents who never brought a best friend in any of the waves (n = 22) were excluded from the analyses. Chi-square tests and a t-test showed that these adolescents did not differ from the other adolescents (n = 464) on sex, socioeconomic status (SES), ethnicity, or age (ps ≥ .122). A series of MANOVAs showed no differences in any of the identity dimensions across the waves (ps ≥ .097).

Adolescents in the selected sample (56.0% males) had a mean age of 14.0 years (*SD* = 0.45) at T1. Adolescents mainly identified themselves as Dutch (95.7%) and lived in families with a medium or high SES (90.1%). Of these adolescents, 90.7% had a participating best friend at T1 (56.4% males, M_{age} = 14.1 years, *SD* = 0.78, 93.1% identified themselves as Dutch), and 65.5% had a participating best friend at every wave. Friendships were moderately stable: across waves, between 61.6% and 69.8% brought the same friend in two adjacent waves. Furthermore, 34.9% of the adolescents brought the same best friend at all five waves. A series of chi-square tests and *t*-tests showed that adolescents within friendships which were stable across all waves did not differ from adolescents within unstable friendships on sex, age, ethnicity, or SES, best friends' sex, age, or ethnicity or perceived balanced relatedness across the waves (*p*s ≥ .058). A series of MANOVAs showed that only at T5 best friends in stable and unstable friendships differed on the educational identity processes, $F(3, 328) = 3.05$, $p = .029$, $\eta_p^2 = .03$. At T5 best friends' educational commitment in unstable friendships was lower (*M* = 17.61, *SD* = 3.95), compared to stable friendships (*M* = 18.96, *SD* = 4.30), $F(1, 330) = 8.91$, $p = .003$, $\eta_p^2 = .03$. This difference was small and only occurring at one time point (*p*s at other time points ≥ .354), and was not expected to distort the results. Adolescents' identity processes did not differ between stable and unstable friendships across the waves (*p*s ≥ .103).

Attrition rate was relatively low. Of the adolescents in the selected sample, 96.8%, 94.4%, 92.5%, 89.2%, and 88.8% participated in the five subsequent waves, respectively. Chi-square tests showed that drop-outs (*n* = 52) did not differ from adolescents still participating at T5 (*n* = 412) on sex or SES (*p*s ≥ .056). Furthermore, a *t*-test showed no differences in balanced relatedness, and two MANOVAs showed no differences in adolescents' and best friends' identity processes at T1 (*p*s ≥ .063). However, adolescents participating at T5 identified themselves more often as Dutch (96.6%) than adolescents who dropped out during the course of the study (88.5%), $\chi^2(1, 463) = 7.39$, $p = .007$, $\varphi = .13$. Furthermore, drop-outs were somewhat older (M_{age} = 14.2 years at T1, *SD* = 0.54) than participating adolescents (M_{age} = 14.0 years at T1, *SD* = 0.44), $t(60) = 2.07$, $p = .043$, $d = 0.54$. In this latter *t*-test, degrees of freedom were adjusted, because Levene's test indicated unequal variances, $F = 5.02$, $p = .026$. These differences were small to moderate and were not expected to distort the results.

Across all waves, 11.9% of the data was missing. Although Little's (1988) Missing Completely at Random (MCAR) test was significant, $\chi^2(3424) = 3663.29$, $p = .002$, the normed χ^2 (χ^2/df) was only 1.07, indicating a random pattern of missingness (Bollen, 1989). Therefore, cases with missing data were included in Mplus 7.11, using Full Information Maximum Likelihood (FIML; Muthén & Muthén, 1998-2012).

Procedure

Participants were recruited from various Dutch elementary schools. Families received information about the RADAR project. Adolescents were asked to invite their best friend to the study. All participating target adolescents, best friends, and parents of these adolescents provided written informed consent. During annual home visits, target adolescents and best friends filled out various questionnaires under supervision of a trained research assistant. Every wave, adolescents and their friends received €15 as a reward for their participation. The ethical-medical committee of University Medical Centre Utrecht has approved the RADAR study.

Measures

Identity. Educational identity dimensions were assessed with the Utrecht-Management of Identity Commitments Scale (U-MICS; Crocetti, Rubini, & Meeus, 2008). This self-report questionnaire contains five items measuring Commitment (e.g., "My education gives me certainty in life"), five items measuring In-depth Exploration (e.g., "I think a lot about my education"), and three items measuring Reconsideration (e.g., "I often think it would be better to try to find a different education"). Adolescents answered on a 5-point scale from 1 (*completely true*) to 5 (*completely untrue*). Items were recoded so that higher values reflect a higher level of commitment, in-depth exploration, and reconsideration. The U-MICS was shown to be a valid measure of adolescents' identity (Crocetti, Rubini, & Meeus, 2008; Crocetti, Rubini, Luyckx, & Meeus, 2008). In the present study, Cronbach's alphas among target adolescents and best friends ranged across waves from .91 to .96 for commitment, from .80 to .87 for in-depth exploration, and from .88 to .92 for reconsideration.

Perceived balanced relatedness. The balanced relatedness scale (Shulman, Laursen, Kalman, & Karpovsky, 1997) was used to measure target adolescents' perceptions of the balanced relatedness provided by their best friend. Target adolescents rated to what extent the seven items characterized their friend (e.g., "My best friend respects my decisions") on a 4-point scale from 1 (*absolutely disagree*) to 4 (*absolutely agree*). Previous research supported the validity of this scale in adolescent friendships (Selfhout et al., 2009; Shulman et al., 1997). In the present study, Cronbach's alphas ranged from .87 to .92 across waves.

Strategy of Analysis

To investigate the over-time associations between adolescents' and best friends' educational identities and perceived best friends' balanced relatedness, we analyzed three cross-lagged panel models in Mplus 7.11 (Muthén & Muthén, 1998-

2012; see Figure 6.1). Each model focused on one of the three educational identity dimensions among adolescents and their best friends (i.e., commitment, in-depth exploration, and reconsideration). Each model contained the following parameters: (a) 1- and 2-year stability paths of adolescents' educational identity, best friends' educational identity, and balanced relatedness, (b) concurrent correlations between these three variables at T1, (c) concurrent correlations between the residuals of these three variables at T2 to T5, reflecting correlated change as well as correlated measurement error, (d) cross-lagged effects between balanced relatedness and adolescents' educational identity, and (e) cross-lagged effects between adolescents' and best friends' educational identity.

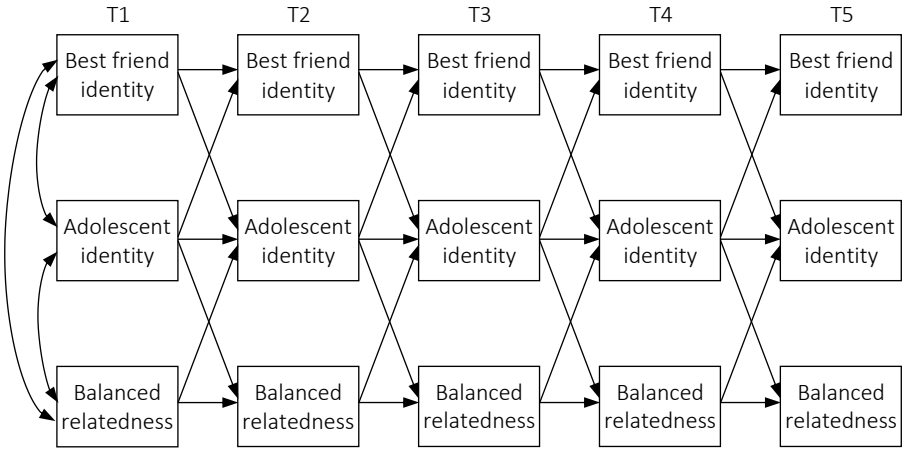

Figure 6.1 | Cross-lagged panel model. Although not displayed for reasons of clarity, this model includes associations between all variables within every wave and 2 year stability paths for adolescent and best friend identity and balanced relatedness.

A Full Information Robust Maximum Likelihood estimator was used to estimate all models (Satorra & Bentler, 2001), for reasons of non-normally distributed variables. The fit of the models was considered to be acceptable by a comparative fit index (CFI) above .90, and a root mean square error of approximation (RMSEA) below .08 (Byrne, 2012).

For each model we tested whether the model was time invariant, meaning that cross-lagged effects and correlated residuals could be constrained to be equal over time without worsening the model fit. In multi-group analyses we tested whether T1 associations, cross-lagged effects or correlated residuals could be constrained between stable (n = 162) and unstable friendships (n = 302) without worsening the

model fit. In the group of stable friendships, adolescents had the same best friend participating at every wave. In the group of unstable friendships, different best friends participated across waves or at some waves no best friend participated. We compared the fit of different models by using chi-square difference tests, after correcting chi-squares with the scaling correction factor because MLR was used.

RESULTS

Descriptive statistics and relative stability of the three educational identity dimensions and balanced relatedness are shown in Table 6.1. Correlations between adolescents' identity dimensions and balanced relatedness and between adolescents' and best friends' identity dimensions are shown in Table 6.2.

Cross-Lagged Panel Model per Identity Dimension

We analyzed three cross-lagged panel models, with each model focusing on one of the educational identity dimensions: educational commitment, in-depth exploration, and reconsideration.

Commitment. In the model for educational commitment, the model fit decreased significantly when all cross-lagged effects were constrained to be equal over time, compared to a model without time invariant constraints, $\Delta\chi^2_{SB}(12) = 21.17$, $p = .048$. Follow-up analyses on each cross-lagged effect showed that only the cross-lagged effect from adolescents' commitment on balanced relatedness varied significantly over time, $\Delta\chi^2_{SB}(3) = 8.67$, $p = .034$. The other cross-lagged effects were time invariant ($ps \geq .243$), as well as the correlated residuals, $\Delta\chi^2_{SB}(9) = 10.69$, $p = .298$. Consequently, all cross-lagged effects and correlated residuals were constrained to be equal over time, except for the cross-lagged effect of adolescents' commitment on balanced relatedness. This resulted in a model with an acceptable model fit: $\chi^2_{SB}(71) = 113.17$, $p = .001$, CFI = .95, RMSEA = .04, 90% CI of RMSEA [.023, .048]. Parameters of this model are provided in Table 6.3.

When comparing the associations and cross-lagged effects in the model between the groups of adolescents with stable and unstable friendships, we found the T1 association between adolescents' educational commitment and perceived balanced relatedness to differ, $\Delta\chi^2_{SB}(1) = 4.05$, $p = .044$. At baseline, adolescents' commitment was related more strongly to their perception of their best friends' balanced relatedness in stable friendships compared to unstable friendships. The other T1 associations did not differ between stable and unstable friendships ($p \geq .704$). Moreover, we found the time variant cross-lagged effect of adolescents' commitment on balanced relatedness to differ, $\Delta\chi^2_{SB}(4) = 10.64$, $p = .031$. Within unstable friendships, adolescents' commitment only significantly predicted

Table 6.1 | Descriptives and Relative Stability of Adolescents' and Best Friends' Educational Identity, and Balanced Relatedness

	T1		T2		T3		T4		T5		Relative stability			
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	T1–T2	T2–T3	T3–T4	T4–T5
Commitment														
Adolescent	18.11	4.13	17.83	4.38	18.00	4.41	18.41	4.51	18.34	4.41	.41***	.47***	.45***	.53***
Best friend	17.74	3.95	18.09	3.98	18.03	3.78	18.37	4.18	18.20	4.09	.43***	.39***	.40***	.45***
In-depth exploration														
Adolescent	15.77	3.90	16.15	3.92	15.74	4.25	16.13	4.14	16.25	3.92	.37***	.37***	.41***	.52***
Best friend	15.26	3.86	15.99	3.76	15.12	3.80	15.41	3.79	15.87	3.70	.33***	.36***	.42***	.32***
Reconsideration														
Adolescent	5.95	2.91	5.82	2.62	5.91	2.89	5.89	3.10	6.16	3.10	.34***	.43***	.27***	.38***
Best friend	5.69	2.83	5.80	2.83	5.84	2.91	5.75	3.04	5.99	3.03	.33***	.28***	.34***	.33***
Balanced relatedness														
Adolescent	22.34	2.95	22.34	2.95	22.16	2.96	22.16	3.25	21.90	3.37	.37***	.46***	.32***	.36***

*** $p < .001$.

Table 6.2 | Correlations Between Adolescents' Educational Identity and Balanced Relatedness and Between Adolescents' and Best Friends' Educational Identities

	Target adolescents' educational identity														
	Commitment					In-depth exploration					Reconsideration				
	T1	T2	T3	T4	T5	T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
Balanced relatedness															
T1	.16***	.06	.15**	.09	.07	.09	.00	.03	.02	.00	-.22***	-.15**	-.09	-.07	-.17**
T2	.07	.06	.14**	-.01	.05	.00	.06	.07	.00	.03	-.09	-.12**	-.09	.04	-.05
T3	.07	.05	.07	.02	.14**	.01	.05	.02	-.06	.02	-.17***	-.08	-.11*	.02	-.13*
T4	.12*	.20***	.22***	.24***	.22***	.03	.11*	.07	.05	.04	-.16**	-.10*	-.09	-.14**	-.24***
T5	.13*	.19***	.17**	.24***	.19***	.15**	.17**	.04	.08	.14**	-.13*	-.15**	-.12*	-.17**	-.13*
Best friends' educational identity															
T1	.09	.07	.06	.02	-.06	.11*	.08	.06	.05	.05	.13**	.03	.10	.10*	.10
T2	.01	.04	.11*	.12*	.04	-.03	.02	.03	.03	.00	.08	.05	.09	.11*	.17**
T3	.03	.03	.14**	.09	.02	.07	.08	.11*	.12*	.04	.03	.06	.09	.04	.01
T4	-.01	-.05	-.03	.05	-.02	.04	.02	-.06	-.01	-.01	.05	.12*	-.04	.11*	.09
T5	.00	.00	.11*	.04	.00	.05	.11*	.01	-.02	.11*	.01	.07	.06	.03	.09

Note. Best friends' educational identity = Educational identity dimensions among best friends, corresponding to the educational identity dimension of target adolescents.
* $p < .05$. ** $p < .01$. *** $p < .001$.

balanced relatedness in stable friendships compared to unstable friendships. The other T1 associations did not differ between stable and unstable friendships ($p \geq .704$). Moreover, we found the time variant cross-lagged effect of adolescents' commitment on balanced relatedness to differ, $\Delta\chi^2_{SB}(4) = 10.64$, $p = .031$. Within unstable friendships, adolescents' commitment only significantly predicted balanced relatedness from T3 to T4, and from T4 to T5. Within stable friendships, adolescents' commitment only significantly predicted balanced relatedness from T3 to T4. These effects showed that a higher level of adolescents' commitment predicted a small relative increase in balanced relatedness, as perceived by the adolescent. Within unstable friendships, this effect might consist of an influence as well as a selection effect, as some adolescents nominated different best friends and some nominated the same best friend across T3 to T4 and T4 to T5. Within stable friendships, this effect indicates an influence effect. The cross-lagged effect of adolescents' commitment on best friends' commitment also differed between stable and unstable friendships, $\Delta\chi^2_{SB}(1) = 7.52$, $p = .006$. Only within stable friendships, a higher level of adolescents' commitment unexpectedly predicted a small relative decrease in best friends' commitment.

The reversed cross-lagged effects from best friends' balanced relatedness and commitment on adolescents' commitment were not significant. Moreover, the residuals of balanced relatedness and adolescents' and their best friends' commitment were not significantly correlated. None of these non-significant cross-lagged effects or correlated residuals differed significantly between stable and unstable friendships ($ps \leq .242$).

In-depth exploration. In the model for educational in-depth exploration, all cross-lagged effects and correlated residuals could be constrained to be equal over time without worsening the model fit, $\Delta\chi^2_{SB}(12) = 13.96$, $p = .303$ and $\Delta\chi^2_{SB}(9) = 11.54$, $p = .241$, respectively. This resulted in a time invariant model with an acceptable model fit, $\chi^2_{SB}(74) = 110.16$, $p = .004$, CFI = .95, RMSEA = .03, 90% CI of RMSEA [.019, .045]. Parameters of this model are provided in Table 6.4.

The cross-lagged effect of adolescents' in-depth exploration on balanced relatedness differed between stable and unstable friendships, $\Delta\chi^2_{SB}(1) = 4.19$, $p = .041$. Only within stable friendships, a higher level of adolescents' in-depth exploration significantly predicted a slight relative increase in perceived balanced relatedness.

In this model, the reversed cross-lagged effect of balanced relatedness on in-depth exploration and the cross-lagged effects between adolescents' and best friends' in-depth exploration were not significant. In addition, the residuals of adolescents' and best friends' in-depth exploration and balanced relatedness were

Table 6.3 | Parameter Estimates of the Cross-lagged Panel Model for Adolescents´ and Best Friends´ Educational Commitment

	T1-T2			T2-T3			T3-T4			T4-T5		
Parameter	*b*	*SE*	β	*b*	*SE*	β	*b*	*SE*	β	*b*	*SE*	β
1 Year stability paths												
Balanced relatedness	0.38	.06	.37***	0.38	.05	.37***	0.29	.07	.27***	0.27	.09	.26**
Commitment (A)	0.42	.06	.40***	0.39	.06	.39***	0.30	.07	.29***	0.45	.07	.45***
Commitment (F)	0.44	.05	.43***	0.29	.06	.31***	0.38	.07	.35***	0.38	.06	.39***
T1 Associations												
Commitment (A) – Balanced relatedness	1.95	.62	.16**									
Stable friendships	3.48	.96	.28***									
Unstable friendships	1.05	.80	.09									
Commitment (A) – Commitment (F)	1.61	.78	.10*									
Balanced relatedness – Commitment (F)	0.88	.51	.08									
Cross-lagged effects												
Balanced relatedness → Commitment (A)	0.06	.04	.04	0.06	.04	.04	0.06	.04	.04	0.06	.04	.05
Commitment (A) → Balanced relatedness												
Stable friendships	0.05	.07	.08	0.09	.05	.13	0.22	.11	.28*	-0.02	.06	-.03
Unstable friendships	-0.02	.04	-.02	-0.03	.04	-.05	0.11	.05	.15*	0.19	.07	.24**
Commitment (F) → Commitment (A)	0.03	.03	.02	0.03	.03	.03	0.03	.03	.02	0.03	.03	.03
Commitment (A) → Commitment (F)												
Stable friendships	-0.09	.04	-.08*	-0.09	.04	-.10*	-0.09	.04	-.08*	-0.09	.04	-.09*
Unstable friendships	0.02	.03	.02	0.02	.03	.02	0.02	.03	.02	0.02	.03	.02

	T2			T3			T4			T5		
	Cov.	*SE*	*r*	Cov.	*SE*	*r*	Cov.	*SE*	*r*	Cov.	*SE*	*r*
Correlated residuals												
Commitment (A) – Balanced relatedness	0.46	.32	.04	0.46	.32	.05	0.46	.32	.04	0.46	.32	.04
Commitment (A) – Commitment (F)	0.68	.38	.05	0.68	.38	.05	0.68	.38	.05	0.68	.38	.05
Balanced relatedness – Commitment (F)	-0.04	.28	-.01	-0.04	.28	-.01	-0.04	.28	.00	-0.04	.28	.00

Note. (A) = of the target adolescents; (F) = of the best friends. Cov. = Covariance. 2-year stability paths were estimated but were omitted from this table.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 6.4 | Parameter Estimates of the Cross-lagged Panel Model for Adolescents´ and Best Friends´ Educational In-depth Exploration

	T1-T2			T2-T3			T3-T4			T4-T5		
Parameter	*b*	*SE*	β	*b*	*SE*	β	*b*	*SE*	β	*b*	*SE*	β
1 Year stability paths												
Balanced relatedness	0.37	.06	.37***	0.37	.05	.37***	0.29	.07	.27***	0.31	.09	.30***
In-depth exploration (A)	0.37	.05	.37***	0.33	.07	.30***	0.34	.06	.35***	0.43	.06	.46***
In-depth exploration (F)	0.33	.05	.33***	0.31	.06	.30***	0.36	.06	.36***	0.25	.07	.26***
T1 Associations												
In-depth exploration (A) – Balanced relatedness	1.02	.66	.09									
In-depth exploration (A) – In-depth exploration (F)	1.59	.73	.11*									
Balanced relatedness – In-depth exploration (F)	0.81	.52	.07									
Cross-lagged effects												
Balanced relatedness → In-depth exploration (A)	-0.01	.03	-.01	-0.01	.03	-.01	-0.01	.03	-.01	-0.01	.03	-.01
In-depth exploration (A) → Balanced relatedness												
Stable friendships	0.06	.03	.09*	0.06	.03	.09*	0.06	.03	.08*	0.06	.03	.09*
Unstable friendships	0.00	.03	.00	0.00	.03	.00	0.00	.03	.00	0.00	.03	.00
In-depth exploration (F) → In-depth exploration (A)	0.04	.03	.04	0.04	.03	.04	0.04	.03	.04	0.04	.03	.04
In-depth exploration (A) → In-depth exploration (F)	-0.03	.02	-.03	-0.03	.02	-.03	-0.03	.02	-.03	-0.03	.02	-.03
	T2			T3			T4			T5		
	Cov.	*SE*	*r*	Cov.	*SE*	*r*	Cov.	*SE*	*r*	Cov.	*SE*	*r*
Correlated residuals												
In-depth exploration (A) – Balanced relatedness	0.41	.30	.04	0.41	.30	.04	0.41	.30	.04	0.41	.30	.04
In-depth exploration (A) – In-depth exploration (F)	0.63	.33	.05	0.63	.33	.05	0.63	.33	.05	0.63	.33	.06
Balanced relatedness – In-depth exploration (F)	-0.08	.26	-.01	-0.08	.26	-.01	-0.08	.26	-.01	-0.08	.26	-.01

Note. (A) = of the target adolescents; (F) = of the best friends. Cov. = Covariance. 2-year stability paths were estimated but were omitted from this table.
* $p < .05$. ** $p < .01$. *** $p < .001$.

not significantly associated. These cross-lagged effects and correlated residuals, as well as the T1 associations, did not differ significantly between stable and unstable friendships (*p*s ≤ .131).

Reconsideration. In the model for educational reconsideration all cross-lagged effects and correlated residuals could be constrained to be equal over time without worsening the model fit, $\Delta\chi^2_{SB}(12) = 17.73$, $p = .124$ and $\Delta\chi^2_{SB}(9) = 6.92$, $p = .645$, respectively. This resulted in a time invariant model with an acceptable model fit: $\chi^2_{SB}(74) = 108.52$, $p = .006$, CFI = .94, RMSEA = .03, 90% CI of RMSEA [.018, .044]. Parameters of this model are provided in Table 6.5.

In this model, balanced relatedness modestly and negatively predicted adolescents' reconsideration across waves, indicating that a higher level of perceived balanced relatedness predicted a small relative decrease in adolescents' reconsideration over time. Furthermore, the residuals of balanced relatedness and adolescents' reconsideration were significantly associated across all waves. A relative increase in perceived balanced relatedness was slightly associated with a relative decrease in adolescents' reconsideration.

The reversed cross-lagged effect of adolescents' reconsideration on balanced relatedness and the cross-lagged effects between adolescents' and best friends' reconsideration were not significant. Furthermore, the residuals of best friends' reconsideration did not correlate significantly with adolescents' reconsideration or with perceived balanced relatedness. These cross-lagged effects and correlated residuals, as well as the T1 associations, did not differ between stable and unstable friendships (*p* ≤ .099).

DISCUSSION

The aim of this 4-year longitudinal study was to examine whether adolescents' educational identity is associated over time with adolescents' perceived balanced relatedness provided by their best friend and their best friend's educational identity. Our findings provide support for over-time associations between adolescents' educational identity and perceived balanced relatedness, but these associations took on a different form for each of the three identity dimensions. That is, the perception of best friends' balanced relatedness was negatively related to adolescents' educational reconsideration one year later. In turn, adolescents' educational in-depth exploration and, in an inconsistent pattern, educational commitment were positively associated with perceived balanced relatedness of friends one year later. Our findings provide no support for positive over-time associations between adolescents' and best friends' educational identity.

Table 6.5 | Parameter Estimates of the Cross-lagged Panel Model for Adolescents´ and Best Friends´ Educational Reconsideration

	T1-T2			T2-T3			T3-T4			T4-T5		
Parameter	*b*	*SE*	β	*b*	*SE*	β	*b*	*SE*	β	*b*	*SE*	β
1 Year stability paths												
Balanced relatedness	0.36	.06	.36***	0.38	.05	.37***	0.29	.07	.27***	0.31	.09	.30***
Reconsideration (A)	0.29	.05	.32***	0.42	.06	.38***	0.21	.07	.19**	0.35	.06	.36***
Reconsideration (F)	0.33	.06	.33***	0.25	.07	.24***	0.32	.07	.30***	0.28	.07	.28***
T1 Associations												
Reconsideration (A) – Balanced relatedness	-1.82	.50	-.21***									
Reconsideration (A) – Reconsideration (F)	1.04	.44	.13*									
Balanced relatedness – Reconsideration (F)	-0.56	.40	-.07									
Cross-lagged effects												
Balanced relatedness → Reconsideration (A)	-0.05	.03	-.06*	-0.05	.03	-.06*	-0.05	.03	-.05*	-0.05	.03	-.06*
Reconsideration (A) → Balanced relatedness	-0.05	.03	-.05	-0.05	.03	-.04	-0.05	.03	-.04	-0.05	.03	-.04
Reconsideration (F) → Reconsideration (A)	0.02	.03	.03	0.02	.03	.02	0.02	.03	.02	0.02	.03	.02
Reconsideration (A) → Reconsideration (F)	0.01	.03	.01	0.01	.03	.01	0.01	.03	.01	0.01	.03	.01
	T2			T3			T4			T5		
	Cov.	*SE*	*r*	Cov.	*SE*	*r*	Cov.	*SE*	*r*	Cov.	*SE*	*r*
Correlated residuals												
Reconsideration (A) – Balanced relatedness	-0.58	.22	-.09**	-0.58	.22	-.09**	-0.58	.22	-.07**	-0.58	.22	-.07**
Reconsideration (A) – Reconsideration (F)	0.37	.20	.06	0.37	.20	.05	0.37	.20	.05	0.37	.20	.05
Balanced relatedness – Reconsideration (F)	-0.17	.22	-.02	-0.17	.22	-.02	-0.17	.22	-.02	-0.17	.22	-.02

Note. (A) = of the target adolescents; (F) = of the best friends. Cov. = Covariance. 2-year stability paths were estimated but were omitted from this table.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Friends' Balanced Relatedness

The most consistent finding of this study was that a higher level of perceived balanced relatedness provided by best friends was related to lower educational reconsideration. These associations were small, but consistent over time, as evident in the T1 correlation, correlated changes, and relations over time of higher balanced relatedness with a relative decrease in adolescents' educational reconsideration one year later. This finding is in line with the idea that friendships form a fruitful ground for identity formation (Erikson, 1968), especially when they are intimate (McLean & Jennings, 2012). Adolescents might feel supported in their educational choices by a best friend they perceive to be high on balanced relatedness. As a result, they might search less for alternatives. Reconsideration of commitment is thought to reflect the troublesome and crisis-like aspect of identity formation, and is positively associated with depression and anxiety (Crocetti, Klimstra, Keijsers, Hale, & Meeus, 2009; Crocetti, Rubini, & Meeus, 2008). Our findings did not show associations of perceived balanced relatedness with adolescents' educational commitment and in-depth exploration one year later. Thus, adolescents' perception of their best friends' balanced relatedness does not relate to the adaptive processes of educational identity formation over time, but might play a role in decreasing adolescents' problematic educational reconsideration.

The adaptive processes of educational identity formation were also associated with adolescents' perceptions of their best friends' balanced relatedness over time. Specifically, a higher level of educational in-depth exploration was related to a relative increase in adolescents' perceived balanced relatedness one year later. In addition, at several time points, a stronger educational commitment was associated with a relative increase in perceived balanced relatedness. No associations of reconsideration with perceived balanced relatedness one year later were found. These findings are in line with theory suggesting that the formation of a coherent identity stimulates the development of intimate friendships, characterized by a high level of balanced relatedness (Bauminger et al., 2008; Erikson, 1963). Adolescents who have a stronger educational commitment and have explored this commitment in-depth might be less sensitive to confronting ideas of their friend, and therefore perceive a higher level of balanced relatedness.

Although we found significant associations of educational commitment and in-depth exploration with perceived balanced relatedness one year later, these associations varied with the age of adolescents and the stability of adolescent friendships. The over-time association of adolescents' educational commitment with perceived balanced relatedness was significant only when adolescents were somewhat older, that is, about 16 to 18 years old. This finding might indicate the

increasing saliency of educational identity with increasing age (Arnett, 2000), possibly triggered by the transition to tertiary education (Kalakoski & Nurmi, 1998). When identity becomes more salient, it might be related more strongly to psychosocial functioning and relationships. Moreover, adolescents' educational commitment and in-depth exploration were associated over time with perceived balanced relatedness within stable friendships, but the association of educational commitment was found across even more time points within unstable friendships. As adolescents within the group of unstable friendships sometimes brought the same and sometimes a different best friend, these over-time associations might indicate both influence and selection effects. Therefore, it is possible that adolescents with a stronger educational commitment deselect a best friend who they perceive as low on balanced relatedness and select a best friend who they perceive as higher on balanced relatedness.

Friends' Identity

Unexpectedly, adolescents' educational in-depth exploration and reconsideration were not related over time to their best friends' level on these respective dimensions. However, adolescents' stronger educational commitment was associated with a small relative decrease in their best friends' educational commitment one year later within stable friendships. This finding contradicts our hypothesis and previous studies (Akers et al., 1998; Dumas, 2011). Moreover, this finding was in contrast with the correlations between these variables, which were non-significant or significant and positive, and might therefore reflect a suppressor effect.

An explanation for the overall absence of over-time associations between adolescents' and best friends' educational identities might be that the educational identity dimensions are not very explicit within adolescent friendships. Adolescents might not perceive their best friends' actual educational identity dimensions and will not be influenced by them, as perception is vital for influence (Ryan, 2010). Possibly adolescents might talk more about their educational identity with their best friend when confronted with salient institutionalized moments of choice, such as the transition to tertiary education. As the adolescents in the current study did not experience these moments of choice at the same time, it might be difficult to find cross-lagged effects between best friends' educational identities.

Limitations

Despite the multi-informant longitudinal design of our study, several limitations should be noted. First, our findings do not provide support for the mechanisms by which adolescents' educational identity and perceived best friends' balanced relatedness predict each other over time. Future qualitative or

experimental research might examine whether adolescents feel supported in their identity development by a friend with a high level of balanced relatedness. In addition, it might be examined whether adolescents high on commitment and in-depth exploration are less sensitive to confronting ideas of their friend. Second, although our study did not show the hypothesized positive associations between best friends' educational identities, future research should assess friends' feedback on the target's identity more directly to examine the assumption of identity control theory that adolescents' identity will be affected by self-relevant information (Kerpelman et al., 1997). Third, from our findings we cannot conclude whether adolescents' perception or the actual degree of best friends' balanced relatedness is associated more strongly with adolescents' educational identity. Future studies with different balanced relatedness measures, such as reports by friends themselves or observations (e.g., Dumas, 2011), might examine this. However, it is likely that adolescents' educational identity is more influenced by and has more influence on adolescents' perception of balanced relatedness than the actual degree of balanced relatedness (Ryan, 2010). Fourth, the present study did not focus on specific moments at which adolescents have to make educational choices, which might trigger the saliency of adolescents' educational identities. This might have led to weaker findings and could be an explanation for the inconsistent findings regarding the associations between adolescents' educational commitment and balanced relatedness one year later. Future longitudinal research across educational transitions is needed, both to replicate the current findings and to examine when and how adolescents' educational identity influences friendships.

CONCLUSION

The findings of this study did not support the hypothesis that adolescent best friends' educational identity dimensions are positively associated and become more similar over time. However, this study shows that adolescents' educational identity dimensions are associated over time with adolescents' perceptions of their best friends' balanced relatedness. These over-time associations might be caused by influence effects, but the cross-lagged effect of commitment on balanced relatedness might also reflect selection effects. The findings indicate a possible increasing saliency of adolescents' educational identity over time, as adolescents with a strong educational commitment experienced an increasing level of balanced relatedness only in late adolescence. Most of the over-time associations were small. However, the associations from in-depth exploration to balanced relatedness, and from balanced relatedness to reconsideration were consistent over time. As these effects accumulate over time they might eventually play an important role in adolescents'

educational identity development and the development of balanced relatedness in friendships.

REFERENCES

Akers, J. F., Jones, R. M., & Coyl, D. D. (1998). Adolescent friendship pairs: Similarities in identity status development, behaviors, attitudes, and intentions. *Journal of Adolescent Research, 13*, 178-201. doi:10.1177/0743554898132005

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, *55,* 469-480. doi:10.1037//0003-066X.55.5.469

Baumeister, R. F., & Muraven, M. (1996). Identity as adaptation to social, cultural, and historical context. *Journal of Adolescence, 19*, 405-416. doi:10.1006/jado.1996.0039

Bauminger, N., Finzi-Dottan, R., Chason, S., & Har-Even, D. (2008). Intimacy in adolescent friendships: The roles of attachment, coherence, and self-discloure. *Journal of Social and Personal Relationships, 25,* 409-428. doi:10.1177/0265407508090866

Bollen, K. (1989). *Structural equations with latent variables*. New York, NY: Wiley.

Bosma, H. A., & Kunnen, E. S. (2001). Determinants and mechanisms in ego identity development: A review and synthesis. *Developmental Review, 21,* 39-66. doi:10.1006/drev.2000.0514

Branje, S., Frijns, T., Finkenauer, C., Engels, R., & Meeus, W. (2007). You are my best friend: Commitment and stability in adolescents' same-sex friendships. *Personal Relationships, 14*, 587-603. doi:10.1111/j.1475-6811.2007.00173.x

Branje, S., Laninga-Wijnen, L., Yu, R., & Meeus, W. (2014). Associations among school and friendship identity in adolescence and romantic relationships and work in emerging adulthood. *Emerging Adulthood, 2,* 6-16. doi:10.1177/2167696813515851

Brechwald, W. A., & Prinstein, M. J. (2011). Beyond homophily: A decade of advances in understanding peer influence processes. *Journal of Research on Adolescence, 21*, 166-179. doi:10.1111/j.1532-7795.2010.00721.x

Byrne, B. M. (2012). *Structural equation modeling with Mplus: Basic concepts, applications, and programming.* New York, NY: Taylor & Francis.

Crocetti, E., Klimstra, T., Keijsers, L., Hale, W. W., & Meeus, W. (2009). Anxiety trajectories and identity development in adolescence: A five-wave longitudinal study. *Journal of Youth and Adolescence, 38,* 839-849. doi:10.1007/s10964-008-9302-y

Crocetti, E., Rubini, M., Luyckx, K., & Meeus, W. (2008). Identity formation in early and middle adolescents from various ethnic groups: From three dimensions to five statuses. *Journal of Youth and Adolescence, 37,* 983-996. doi:10.1007/s10964-007-9222-2

Crocetti, E., Rubini, M., & Meeus, W. (2008). Capturing the dynamics of identity formation in various ethnic groups: Development and validation of a three-dimensional model. *Journal of Adolescence, 31,* 207-222. doi:10.1016/j.adolescence.2007.09.002

Doumen, S., Smits, I., Luyckx, K., Duriez, B., Vanhalst, J., Verschueren, K., & Goossens, L. (2012). Identity and perceived peer relationship quality in emerging adulthood: The mediating role of attachment-related emotions. *Journal of Adolescence, 35,* 1417-1425. doi:10.1016/j.adolescence.2012.01.003

Dumas, T. M. (2011). *An observational assessment of peer group contributions to adolescent identity development* (Doctoral dissertation). Retrieved from https://ir.lib.uwo.ca/etd/168

Erikson, E. H. (1963). *Childhood and society* (2nd ed.). New York, NY: Norton.

Erikson, E. H. (1968). *Identity: Youth and crisis*. New York, NY: Norton.

Johnson, H. D. (2012). Relationship duration moderation of identity status differences in emerging adults' same-sex friendship intimacy. *Journal of Adolescence, 35*, 1515-1525. doi:10.1016/j.adolescence.2012.07.001

Kalakoski, V., & Nurmi, J. (1998). Identity and educational transitions: Age differences in adolescent exploration and commitment related to education, occupation, and family. *Journal of Research on Adolescence, 8,* 29-47. doi:10.1207/s15327795jra0801_2

Kerpelman, J. L., Pittman, J. F., & Lamke, L. K. (1997). Toward a microprocess perspective on adolescent identity development: An identity control theory approach. *Journal of Adolescent Research, 12*, 325-346. doi:10.1177/0743554897123002

Little, R. J. A. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association, 83,* 1198-1202. doi:10.1080/01621459.1988.10478722

Luyckx, K., Soenens, B., Goossens, L., & Vansteenkiste, M. (2007). Parenting, identity formation, and college adjustment: A mediation model with longitudinal data. *Identity: An International Journal of Theory and Research, 7*, 309-330. doi:10.1080/15283480701600785

Marcia, J. E. (1966). Development and validation of ego-identity status. *Journal of Personality and Social Psychology, 3,* 551-558. doi:10.1037/h0023281

McLean, K. C., & Jennings, L. E. (2012). Teens telling tales: How maternal and peer audiences support narrative identity development. *Journal of Adolescence, 35,* 1455-1469. doi:10.1016/j.adolescence.2011.12.005

Mclean, K. C., & Pasupathi, M. (2010). *Narrative development in adolescence: Creating the storied self.* New York, NY: Springer.

Meeus, W., Iedema, J., Helsen, M., & Vollebergh, W. (1999). Patterns of adolescent identity development: Review of literature and longitudinal analysis. *Developmental Review, 19*, 419-461. doi:10.1006/drev.1999.0483

Meeus, W., Van de Schoot, R., Keijsers, L., Schwartz, S. J., & Branje, S. (2010). On the progression and stability of adolescent identity formation. A five-wave longitudinal study in early-to-middle and middle-to-late adolescence. *Child Development, 81*, 1565-1581. doi:10.1111/j.1467-8624.2010.01492.x

Muthén, L. K., & Muthén, B. O. (1998-2012). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.

Reis, O., & Youniss, J. (2004). Patterns in identity change and development in relationships with mothers and friends. *Journal of Adolescent Research, 19,* 31-44. doi:10.1177/0743558403258115

Ryan, A. M. (2010). Peer groups as a context for the socialization of adolescents' motivation, engagement, and achievement in school. *Educational Psychologist, 35,* 101-111. doi:10.1207/S15326985EP3502_4

Satorra, A., & Bentler, P. M. (2001). A scaled difference chi-square test statistic for moment structure analysis. *Psychometrika, 66,* 507-514. doi:10.1007/BF02296192

Selfhout, M. H. W., Branje, S. J. T., & Meeus, W. H. J. (2009). Developmental trajectories of perceived friendship intimacy, constructive problem solving, and depression from early to late adolescence. *Journal of Abnormal Child Psychology, 37,* 251-264. doi:10.1007/s10802-008-9273-1

Shulman, S., & Knafo, D. (1997). Balancing closeness and individuality in adolescent close relationships. *International Journal of Behavioral Development, 21*, 687-702. doi:10.1080/016502597384622

Shulman, S., Laursen, B., Kalman, Z., & Karpovsky, S. (1997). Adolescent intimacy revisited. *Journal of Youth and Adolescence, 26*, 597-617. doi:10.1023/A:1024586006966

Thorne, A., & Shapiro, L. A. (2011). Testing, testing: Everyday storytelling and the construction of adolescent identity. In E. Amsel & J. Smetana (Eds.), *Adolescent vulnerabilities and opportunities* (pp. 117-138). Cambridge, England: Cambridge University Press.

Van Lier, P. A. C., Frijns, T., Den Exter Blokland, E., Neumann, A., Koot, H. M., & Meeus, W. (2008). *The RADAR study: Design, description of sample and validation of cohort assignment.* Unpublished manuscript.

Weeks, T. L., & Pasupathi, M. (2010). Autonomy, identity, and narrative construction with parents and friends. In K. C. Mclean & M. Pasupathi (Eds.), *Narrative development in adolescence: Creating the storied self* (pp. 65-91). New York, NY: Springer.

CHAPTER 7 –

Integration and General Discussion

The concept of personal identity is assumed to consist of multiple components, which play a key role in young people's psychosocial development and well-being. An adaptive identity is assumed to reflect personal distinctiveness, coherence, and continuity. Moreover, these components of identity can be conceptualized in various ways and might be constructed in multiple domains, resulting in a multitude of (sub)components. So far, these different components of identity have mostly been studied in isolation. This is unfortunate because bringing together the various components would improve the understanding of the broader personal identity construct. For example, connecting the various components would improve the understanding of the structure of young people's personal identity, how this broader construct develops, and its role in the association with personal and social characteristics of adolescents and young adults. Consequently, the current thesis had the following three aims: (a) improving the understanding of the conceptualization of personal identity by studying the association between different components, (b) gaining knowledge on the general developmental trends of different components of personal identity development, and (c) gaining knowledge on the correlates, predictors, and outcomes of the different components. In this final chapter, the findings presented in this thesis are summarized and integrated with regard to these three aims. An overview of all findings is displayed in Table 7.1. Moreover, the conclusions that can be drawn from these findings and their implications are discussed.

Table 7.1 | Overview of Research Findings per Chapter

Ch.	Findings
2	• Development distinctiveness: Not associated with adolescents' and young adults' ages. • Development coherence: Inconsistent findings on association with age. • Development continuity: Rather stable but increases slightly across adolescence and young adulthood. • Link psychosocial functioning distinctiveness: U-reversed pattern. • Link psychosocial functioning coherence: Lack of strong evidence. • Link psychosocial functioning continuity: Positive association.
3	• General distinctiveness and comparative distinctiveness were unrelated. • General and comparative distinctiveness had different nomological networks. • Higher general distinctiveness was associated with less maladaptive identity formation, and better psychosocial well-being. • Higher comparative distinctiveness from important others was associated with lowered social well-being. • Compared to general distinctiveness, commitment strength to future plans was more strongly associated with indicators of maldaptive identity formation and psychosocial well-being and had more consistent incremental predictive value. • General distinctiveness did have some incremental value in predicting psychosocial well-being over commitment strength to future plans.

Table 7.1 Continued

Ch.	Findings
4	• Making a self-event connection was associated with stronger commitments (commitment making and identification with commitment) and more exploration (in breadth and in depth), but associations were small. • Agency was associated with stronger commitments (commitment making and identification with commitment) and more exploration in depth, but associations were small. • Commitment strength was on average stable in middle adolescence. • Exploration (in breadth, in depth, and ruminative) on average increased in middle adolescence. • Making a self-event connection did not predict developments in commitment or exploration. • More expressed agency predicted a stronger increase in identification with commitment and exploration in breadth and in depth over time.
5	• Career commitments, but not interpersonal commitments, were predictive of relatively less stressful life events across the next 3 or 4 years. • Interpersonal commitments, but not career commitments, were predictive of a relative decrease in depressive symptoms 3 years later, but not 4 years later. • No age differences in commitments' predictive effects across adolescence and young adulthood. • Stressful life events and depressive symptoms were predictive of a weakening of career commitments, but not interpersonal commitments, 3 and 4 years later respectively. • Strong commitments did not function as a buffer in the predictive effect of stressful life events on depressive symptoms. • (Changes in) career and interpersonal commitments were slightly associated, and stronger commitments predicted a relative strengthening in each other across 3 years.
6	• Best friends' educational commitment, in-depth exploration, and reconsideration did not predict each other over time across adolescence. • Perceived balanced relatedness in best friendships was predictive of a relative decrease in educational reconsideration, but not predictive of educational commitment and in-depth exploration. • Educational commitment (in late adolescence) and in-depth exploration (in stable friendships), but not the level of educational reconsideration, were predictive of a relative increase in balanced relatedness.

SUMMARY AND INTEGRATION OF MAIN FINDINGS

Associations Between Different Components of Personal Identity Formation

Examining the extent to which different components overlap or are distinct is necessary to get a better insight in the structure of the broader personal identity construct. Therefore, associations were examined between three components that characterize an adaptive identity (i.e., distinctiveness, coherence, and continuity), between two conceptualizations of distinctiveness (i.e., general and comparative distinctiveness), between two approaches to conceptualize and study identity formation, strongly focused on continuity (i.e., the narrative and the dual-cycle approach), and between equal conceptualizations of continuity in two different domains of identity formation (i.e., the career and interpersonal domain).

Associations between distinctiveness, coherence, and continuity. Personal distinctiveness, coherence, and continuity are all thought to reflect a more adaptive personal identity (Pasupathi, 2014). Personal distinctiveness refers to seeing the self as unique from others and has mostly been studied in social and clinical psychology. Personal coherence refers to perceiving the self as similar across life domains and has primarily been studied in developmental, social, and personality psychology. Personal continuity refers to perceiving the self as the same person across time and has mainly been studied in developmental psychology, often with a focus on commitments, and within narrative research traditions in clinical, developmental, and personality psychology.

The systematic review (Chapter 2) showed that the few existing studies on the associations between these three components indicated that coherence was not significantly associated with distinctiveness (Pilarska & Suchańska, 2015b) nor with commitment (i.e., continuity; Dunkel, Minor, & Babineau, 2010). Regarding the link between distinctiveness and continuity, distinctiveness was slightly positively associated with a sense of continuity and commitment strength (Pilarska & Suchańska, 2015a), although the association with a sense of continuity was not always found to be significant (Pilarska, 2014). In addition to these previous findings, the findings in two samples of young adults (Chapter 3) confirmed that distinctiveness was weakly positively associated with commitment strength. However, the findings from these studies also showed that whether or not distinctiveness was associated with continuity depended on how distinctiveness was conceptualized.

Theories and studies on distinctiveness conceptualize distinctiveness in different ways (Kelly, 1955; Snyder & Fromkin, 1980). In previous studies on the association of distinctiveness with coherence or continuity, distinctiveness was

conceptualized as the degree to which one feels distinct from others in general. I refer to this conceptualization as general distinctiveness. However, other studies and theories have identified another conceptualization of distinctiveness: the degree to which one's self-perception deviates from one's perception of others (Kelly, 1955). I refer to this as comparative distinctiveness. In contrast to measures of general distinctiveness, which are self-reports on an abstract feeling of distinctiveness from others in general, comparative distinctiveness is measured by comparing self-reports on how individuals view themselves and others with regard to particular characteristics. This means that both the characteristics (e.g., the Big Five) and the other persons (e.g., list of personally important others) are specified. Based on the pattern of perceived similarities and differences, a distinctiveness score is calculated. The findings in two young adult samples (Chapter 3) demonstrated that comparative distinctiveness was consistently not significantly associated with continuity, but general distinctiveness was.

Associations between general and comparative distinctiveness. Furthermore, the findings in the two young adults samples (Chapter 3) demonstrated that general distinctiveness and comparative distinctiveness were not significantly associated with each other. This was found using different measures of comparative distinctiveness (i.e., repertory grid technique vs. personality questionnaires; comparison with important vs. disliked others) and across both samples. The absence of a link between the two conceptualizations was unexpected, because individuals have been thought to derive their sense of general distinctiveness from comparative distinctiveness (Snyder & Fromkin, 1980). Possibly, individuals weigh the importance of characteristics in varying ways when aggregating perceived distinctions and similarities into a general sense of distinctiveness, in contrast to comparative distinctiveness measures (which give every characteristic the same weight).

Associations between the narrative and dual-cycle approach. So far, I have discussed findings on associations between components of adaptive identity formation and between more specific conceptualizations of one component. However, in addition to different components of adaptive identity, different theories and related methodologies have been formulated to study the processes of identity *formation*: the narrative and the dual-cycle approach. The narrative and dual-cycle approach both originated from the writings of Erikson and share a strong focus on personal continuity. Yet, how a personal identity is conceptualized (an autobiographical life story vs. a set of identity commitments) and studied (coded narratives vs. self-report questionnaires) differs between the two approaches. The narrative and dual-cycle approach are thought to be complementary because they might capture related processes with different concepts (McLean & Pasupathi,

2012). Moreover, both approaches could inform each other and predict developments in each other over time. In this thesis, the link between these two approaches was examined in Chapter 4 with a focus on two characteristics of adolescents' turning point narratives that were hypothesized to be associated with the dual-cycle processes.

The first autobiographical characteristic was the presence of a self-event connection, defined as an explicit connection between a past event and the current self, which is an indicator of autobiographical reasoning (McLean et al., 2019; Pasupathi, Mansour, & Brubaker, 2007). Self-event connections likely play an important role in the construction of narrative identities and are thought to promote a feeling of personal continuity because they either explain personal change or mark personal stability (Pasupathi et al., 2007). In the examination of links with the dual-cycle approach, self-event connections were hypothesized to be an expression of identity exploration and to be involved in the construction and strengthening of identity commitments (McLean & Pasupathi, 2012). The findings showed that the presence of a self-event connection was concurrently weakly associated with more exploration in breadth and in depth and stronger commitments, like found in previous studies among young adults (e.g., McLean, Syed, & Shucard, 2016; Merrill, Waters, & Fivush, 2016). The presence of a self-event connection did not predict adolescents' developments in commitment strength. Possibly, self-event connections and dual-cycle processes are only weakly associated because of their conceptual differences. That is, self-event connections and commitments focus on different aspects of continuity, connecting the present to the past or to the future, respectively. Moreover, while the presence of a self-event connection not only indicates engagement in autobiographical reasoning but also the ability to do this successfully (i.e., a connection is made), exploration measures only focus on engagement. In addition to this, the different methodologies that are used to asses autobiographical reasoning (i.e., narrative coding) and the dual-cycle processes (i.e., self-reported) might result in discrepancies. For example, some adolescents might demonstrate autobiographical reasoning without having to put a lot of effort into this and might not view themselves as highly engaged in identity exploration. All these differences indicate that both approaches capture complementary aspects of adolescents' identity formation.

The second examined autobiographical characteristic was the degree of agency in adolescents' narratives: the extent to which adolescents describe themselves as able to influence the course of events (Adler, 2012). Expressing agency was expected to be worthwhile for adolescents to manage the complex and difficult task of the formation and evaluation of identity commitments (Koepke & Denissen, 2012; Schwartz, Côté, & Arnett, 2005). The findings showed that adolescents who

expressed more agency in their narratives were slightly more strongly committed and explored more in depth. Moreover, adolescents who expressed more agency showed more increases in identification with commitment and exploration in breadth and depth over time. Thus, viewing oneself as agentic and expressing this in a key autobiographical narrative seems to encourage identity exploration and commitments to identity options that adolescents themselves view as fitting them. Moreover, these findings also indicate that different approaches to the study of identity formation can inform each other.

Associations between identity domains. Young people develop identity commitments that reflect personal continuity in multiple domains. Two separate domains of commitment construction were examined in Chapter 5: the career and interpersonal domain. Although not the main focus of this chapter, the two empirical studies presented in this chapter did show that adolescents' and young adults' career and interpersonal commitment strength were slightly positively associated. Moreover, relative changes in career and interpersonal commitment strength were associated, albeit weakly, across intervals of 3 and 4 years. Across a 3-year interval, stronger commitments in one domain predicted a small relative strengthening in the other domain, and vice versa. These findings fit with previous findings that showed that the congruence between domains within time and their correlated changes was significant but weak in adolescence and young adulthood (Albarello, Crocetti, & Rubini, 2018; Crocetti, Scrignaro, Sica, & Magrin, 2012; Goossens, 2001; Luyckx, Seiffge-Krenke, Schwartz, Crocetti, & Klimstra, 2014). Higher cross-domain congruence between the development of commitments has been found when examining young adults' trajectories of identity formation (Kunnen, 2010) and in adulthood (Fadjukoff, Pulkkinen, & Kokko, 2005). Together these findings indicate that individuals might approach the construction of commitments in similar ways across domains, yet the precise developments differ. Differences might occur because certain events (e.g., the transition to tertiary education) might trigger increasing evaluation of specific commitments at specific times (Kalakoski & Nurmi, 1998) or because of the contextual barriers that differ per individual and per domain (Yoder, 2000).

Integration. Overall, the findings on associations between different components of young people's personal identities demonstrate that different components are not or significant but weakly associated. This provides more information about the structure of young people's personal identity. For instance, the findings suggest that general distinctiveness is not directly based on comparative distinctiveness. More general, the various significant, albeit weak, associations indicate that multiple component are part of the global personal identity concept. That is, small significant positive associations appeared when

examining the links between general distinctiveness and commitment strength, between key dimensions of the narrative and the dual-cycle approaches, and between two domain-specific commitments.

Coherence was the exception to these small links, as it so far seemed unassociated with distinctiveness and continuity. This was found in studies using coherence measures focused on similarity between self-perceptions across domains. Although this specific conceptualization of coherence is thus likely not associated with distinctiveness and continuity, other conceptualizations might be. That is, empirical studies have not yet examined whether measures focused on conflicts between domain-specific identities (Galliher, McLean, & Syed, 2017; Harter & Monsour, 1992) are associated with personal distinctiveness or continuity.

Moreover, the overall findings indicate that, although various components are part of the same global personal identity concept, adaptive levels of them do not necessarily occur together. Most components that provide information on the extent to which an adaptive personal identity is formed were weakly associated. Consequently, adaptive characteristics of the global personal identity concept do not always go hand in hand; Young people might score well on one component and less well on another.

Development of Personal Identity in Adolescence and Young Adulthood

Development of distinctiveness. The development of the three components of an adaptive personal identity – distinctiveness, coherence, and continuity – in adolescence and young adulthood was also examined in this thesis. Regarding distinctiveness, the review in Chapter 2 demonstrated that previous cross-sectional findings consistently showed that a general sense of distinctiveness, indicated by measures focusing on either extreme or more moderate levels, was not significantly associated with age across adolescence and young adulthood. Although it should be kept in mind that longitudinal studies truly measuring the development of distinctiveness are lacking, these findings indicate that individuals generally already have a sense of distinctiveness by adolescence. Possibly, distinctiveness develops primarily in childhood, prior to adolescence. Indeed, Adams-Webber (1985) found that comparative distinctiveness was higher in adolescence than in childhood.

Development of coherence. Developments in coherence are expected in adolescence and young adulthood because of theorized cognitive advancements in the understanding of oneself (Harter, 2012), and because increasingly more domains become important to one's personal identity during these periods (Van Hoof & Raaijmakers, 2002). The few cross-sectional studies that examined age differences in coherence (i.e., fewer conflicts between self-perceptions across

domains) identified in the review in Chapter 2 showed inconsistent findings. Findings of study by Harter and Monsour (1992) indicated a significant decrease in coherence across early and middle adolescence followed by a slight increase, approaching significance, in late adolescence. However, in later studies no significant age differences across adolescence appeared (Shadel, Niaura, & Abrams, 2004; Shadel, Tharp-Taylor, & Fryer, 2008, 2009). The pattern found in the earlier study by Harter and Monsour (1992) would fit with theory indicating that individuals learn to recognize differences between oneself across various domains in middle adolescence and to integrate or normalize such differences in late adolescence (Harter, 2012). However, as it has not been replicated and all studies had small sample sizes, it remains a largely unanswered question how personal coherence develops across adolescence and young adulthood. Studies using adequate sample sizes and psychometrically validated measures of coherence are needed to examine the development of coherence.

Development of continuity. Developments in personal continuity, and in particular the formation and evaluation of identity commitments, have been examined more often and longitudinally. Previously, longitudinal studies on the formation and evaluation of identity commitments were reviewed by Meeus (2011). This review showed that individual differences in how young people cope with identity formation are rather stable, with individuals often remaining is the same identity status (i.e., profiles based on engagement in commitment and exploration strength) across years. This would indicate that identity formation is a rather slow process and dynamics had previously been overrated. Yet, when looking at the changes that did occur, this review showed that there was evidence for identity maturation. Furthermore, individual differences in the commitment and exploration processes were found to be more stable in young adulthood compared to adolescence. These findings provide support for the idea that identity formation is a developmental task for young people.

The review in Chapter 2 demonstrated that later longitudinal studies spanning multiple years confirmed that young people's strength of commitment is quite stable across time. This was reflected in: the stability of early to late adolescents' career identity statuses (Hirschi, 2012), the mean-level stability of commitment strength in many identified identity status trajectories in young adulthood (Kunnen, 2010; Luyckx, Klimstra, Schwartz, & Duriez, 2013), and the mean-level stability of young adults' degree of general commitment (Shirai, Nakamura, & Katsuma, 2016). Furthermore, when focusing on the changes in commitment strength that have been found, the studies published after Meeus' (2011) review also indicated a slight general strengthening of young people's commitments. Findings showed that the number of early to late adolescents in career identity statuses characterized by high

commitment increased across 1 year (Hirschi, 2012) and that identity status trajectories with strong general commitments were more common in an older cohort of adolescents (Meeus, Van de Schoot, Keijsers, & Branje, 2012). Recently, findings of a large study among early to late adolescents also confirmed an average strengthening of educational and friendship commitments (Hatano, Sugimura, Crocetti, & Meeus, 2019). In addition to this, the findings of a cross-sectional study by Habermas and Köber (2015) in which feelings of personal continuity between the past and present were assessed, showed that with age young people reported a higher degree of experienced personal continuity. Overall, there is evidence for general progressive development in commitment strength across adolescence and young adulthood.

Although the systematic review points out that overall the developmental trends indicate a strengthening of commitments, previous studies have also shown to result in different conclusions. Possibly, findings become more consistent when zooming on specific periods. Therefore, mean-level developments in the commitment and exploration processes across middle adolescence were examined in a longitudinal study in Chapter 4. The findings of the longitudinal study indicated that in middle adolescence, commitment strength does not increase. This replicated previous findings on early and middle adolescence (Crocetti, Klimstra, Hale, Koot, & Meeus, 2013; Klimstra, Hale, Raaijmakers, Branje, & Meeus, 2010). Yet, the longitudinal study in Chapter 4 showed that exploration (in breadth, in depth, and ruminative) did on average increase across middle adolescence. Overall, these findings fit with the general idea of dual-cycle models (Crocetti, Rubini, & Meeus, 2008; Luyckx, Goossens, & Soenens, 2006) that identity formation starts with a phase of exploring identity options. Thus, this indicates that during middle adolescence the exploration of identity commitments increases, but commitments do not strengthen. Later, a slight strengthening of commitments could occur, as indicated by the systematic review (Chapter 2).

So far, I have primarily discussed general developments in personal identity components that can be identified across adolescence and young adulthood. However, it should be kept in mind that individuals might differ from the average trajectories. For continuity, these individual differences were shown in the significant variation between individuals in the slopes of the dual-cycle processes in Chapter 4, which are consistent with different identity status trajectories that have been identified in adolescence (Meeus et al., 2012) and young adulthood (Kunnen, 2010). Thus, although the evidence on general development trends points towards identity maturation across adolescence and young adulthood, there are interindividual differences in the development of personal identity.

Integration. Together the findings on general developments indicate, as articulated in the integrative developmental framework of identity in Chapter 2, that general distinctiveness might provide a foundation for the development of coherence and continuity (Pasupathi, 2014). Individuals first need to have a sense of "I" on which they can base their experiences of who they are across domains and time. Adolescence and young adulthood are likely mostly characterized by constructing a personal identity that reflects coherence and continuity. If general distinctiveness would be foundational, this would mean that at first adolescents' sense of distinctiveness might primarily stimulate the development of personal coherence and continuity, and that later all components might strengthen each other. The findings have shown that different component of personal identity are indeed associated, however only weakly. If distinctiveness is indeed foundational, distinctiveness in late childhood might possibly be stronger associated with continuity and coherence in adolescence or young adulthood compared to individuals' concurrent sense of distinctiveness (Hill, Edmonds, & Jackson, 2019). Still, the weak associations between the components also indicate that in addition to the effect that different components might have on each other, the links with other aspects in the lives of young people that play a role in the development of personal identity differ between the components.

Correlates, Predictors, and Outcomes of Personal Identity Formation

To get insight in the factors that are involved in the development of specific personal identity components and in the (incremental) importance of these components, I examined the correlates, predictors and outcomes of different personal identity components. Moreover, in the review in Chapter 2, previous studies in which the link between distinctiveness, coherence, or continuity with young people's psychosocial functioning was examined were identified.

Correlates of distinctiveness. Previous cross-sectional studies examining the link between distinctiveness and young people's psychosocial functioning all focused on general distinctiveness. However, the measures used in these studies differed in whether they focused on one of the extreme ends of feeling distinct or on more moderate feelings of distinctiveness. Together these studies indicate an inverted U-shaped relation between general distinctiveness and adolescents' and young adults' psychosocial functioning. Indicators of extremely low or high levels of general distinctiveness were negatively associated with psychosocial functioning, whereas moderate general distinctiveness was positively associated with psychosocial functioning. Both studies in Chapter 3 also revealed that a moderate type of general distinctiveness was positively associated with multiple indicators of psychosocial well-being. In contrast to general distinctiveness, comparative

distinctiveness from important others was only associated with social well-being and this association was negative. Furthermore, when focusing on disliked others, comparative distinctiveness was not associated with any indicator of psychosocial well-being. These findings reveal that the unitary label of 'distinctiveness' masks the existence of separate concepts, which have distinct nomological networks.

Correlates of coherence. With regard to coherence, it was discussed in Chapter 2 that studies on coherence (i.e., similarity in self-perceptions across domains) and young people's psychosocial functioning often used measures that were later criticized. These measures would be confounded with irrelevant variance across the characteristics within domains and with mean scores on traits (Baird, Le, & Lucas, 2006). When correcting for this, most associations with psychosocial functioning become nonsignificant or weak (i.e., weak negative associations with negative affect). Overall, no convincing evidence has been found that supports a link between coherence and psychosocial functioning. This could indicate that measures assessing the degree of similarity between one's self-perceptions across different domains are not capturing the aspect of incoherence that might trouble young people. Previous studies have shown that the degree of conflict that adults experience between the domains of work and family are associated with well-being (Allen, Herst, Bruck, & Sutton, 2000). It is thus possible that alternative measures of coherence that focus more on the degree of experienced conflict between the domains of young people's identities (e.g., Harter & Monsour, 1992) are associated with psychosocial functioning.

Correlates of continuity and distinctiveness. With regard to continuity, the review in Chapter 2 showed that not only feelings of certainty about who one will be in the future (i.e., commitment strength) but also feelings of personal continuity between the past and present were positively associated with indicators of psychosocial functioning. So far, the findings in this thesis thus indicate that both continuity and general distinctiveness are concurrently associated with young people's psychosocial functioning. In Chapter 3, these associations were compared with each other and it was tested whether distinctiveness and continuity have incremental predictive value over each other in predicting psychosocial functioning. Both studies in Chapter 3 showed that young adults' commitment strength was concurrently either equally strong or more strongly associated with various indicators of psychosocial functioning than general distinctiveness. Although commitment strength was a stronger predictor of concurrent psychosocial functioning with consistent incremental value over general distinctiveness, both studies also showed that general distinctiveness had incremental value in predicting some aspects of psychosocial functioning. This latter finding replicated a previous finding that general distinctiveness had incremental predictive value over a sense of

personal continuity in predicting positive affect (Pilarska, 2014). The concurrent predictions of psychosocial functioning by commitment strength and general distinctiveness do thus partly overlap, but both are also partly unique.

Predictors and outcomes of continuity, across domains and processes. So far, only associations of continuity (i.e., commitment strength) with personal and social characteristics have been examined longitudinally. Recent findings on predictors and possible outcomes of commitment strength were identified in the review in Chapter 2. Stronger commitments predicted increases in adaptive personal characteristics, such as young adults' self-esteem (Luyckx, Klimstra, Duriez, et al., 2013), as well as an improvement in interpersonal relationships, such as adolescents' relationships with their mother (Crocetti, Branje, Rubini, Koot, & Meeus, 2017). Conversely, some adaptive personal characteristics, such as less delinquent behavior by adolescents (Mercer, Crocetti, Branje, Van Lier, & Meeus, 2017) and higher self-esteem of adolescents and young adults (Luyckx, Klimstra, Duriez, et al., 2013), predicted a relative strengthening of commitments across time.

The predictors and outcomes of strong commitments might differ per domain. In Chapter 5, longitudinal associations of depressive symptoms and stressful life events with career and interpersonal commitments were examined across adolescence and young adulthood. Two longitudinal studies showed that only stronger career commitments predicted a relative decrease in the frequency of stressful life events experienced by adolescents and young adults across the next 3 or 4 years. Possibly, stronger career commitments function as a compass guiding behavior, resulting in less random and risky behaviors and choices (Erikson, 1968; Roberts, O'Donnell, & Robins, 2004; Thoits, 1983). Stronger interpersonal commitments might not show this predictive effect, because they can also entail a commitment to a risk-taking peer. Stronger interpersonal commitments did predict a small relative decrease in depressive symptoms across 3 years, but not 4 years. This indicates that the detrimental effect of weak interpersonal commitments might wear out at some point and that this detrimental effect does not exist or wears out even faster for career commitments.

Conversely, career commitments, but not interpersonal commitments, weakened after experiencing depressive symptoms or more stressful life events. Interpersonal commitments might weaken less during difficult times than career commitments because individuals might appreciate support from others and experience the importance of interpersonal relationships (Ebata & Moos, 1991; Updegraff & Taylor, 2000). This could explain the previous cross-sectional finding that career commitments are more strongly associated with internalizing symptoms than interpersonal commitments (Clancy & Dollinger, 1993; Helsen, Vollebergh, &

Meeus, 1999). In various ways, the studies in Chapter 5 thus demonstrate that the predictors and possible outcomes of adaptive identity formation differ per domain.

Within the process of forming strong identity commitments, not only different domains but also different processes can be distinguished. In a longitudinal study, it was examined how three different processes that are involved in the formation and maintenance of educational commitments (i.e., commitment, in-depth exploration, and reconsideration) are related to characteristics of adolescents' best friends (Chapter 6). This study showed that the formation and maintenance of best friends' educational commitments does not predict each other over time. What was related to adolescents' educational identity formation over time was the degree of balanced relatedness that their best friends provided, but the demonstrated effects differed per identity process. Stronger educational commitments predicted relative increases in balanced relatedness but only in late adolescence, possibly because of an increasing saliency of educational identity. Additionally, more in-depth exploration predicted relative increases in balanced relatedness in stable friendships. The other way around, a relative decrease in adolescents' educational reconsiderations was predicted by a higher degree of perceived balanced relatedness within the friendship. Thus, although the three educational identity processes were consistently associated with one characteristics of best friends and not with another, the findings do also demonstrate that the precise associations of the processes with best friends' balanced relatedness differed across time.

Integration. Overall, the findings show that components of young people's personal identity differ in their association with personal and social characteristics. Although the findings mostly indicate that every component has added value, this was not found for the component of coherence. Empirically, coherence was seldom significantly associated with psychosocial functioning. This absence of an association could however be caused by the measurement of coherence that focuses on similarity in self-perceptions across domains, which might not really capture the conceptualization of personal coherence that is important for young people. Because of this methodological issue, it remains unclear whether and how the nomological network of personal coherence differs from those of distinctiveness and continuity.

Findings on differences between the components of distinctiveness and continuity, and more specific conceptualizations of these components, did show clear differences between components. Concurrently, being committed to future plans, feeling distinct from others in general, and perceiving similarities between oneself and important others were all shown to have incremental value in predicting better psychosocial functioning of young adults. The longitudinal findings also indicate differences between components.

Each personal and social predictor of identity formation predicted specific ways of more (mal)adaptive identity formation. The negative experiences of stressful life events and depressive symptoms predicted a relative weakening of career commitments, but not interpersonal commitments. A higher degree of balanced relatedness in friendships predicted a relative decrease in educational identity reconsideration, but not a relative increase in commitment strength or exploration. Furthermore, specific ways of more (mal)adaptive identity formation varied in the personal and social characteristics that they were predictive of. While stronger career commitments were associated with relatively less stressful life events over time, stronger interpersonal commitments were predictive of relatively less depressive symptoms. Additionally, stronger educational commitments and more in-depth exploration, but not the degree of educational reconsideration, were predictive of relative increases in balanced relatedness in close friendships over time.

In sum, the different components of personal identity formation have unique associations with personal and social characteristics. The adaptiveness of the complete personal identity thus seems to depend on the development of its multiple components, with each component providing a distinct contribution. Moreover, the findings suggest that what young people might need to develop a component in an adaptive manner and what the possible outcomes of these developments are differs per component.

CONCLUSIONS AND IMPLICATIONS OF RESEARCH FINDINGS

Together all findings related to the three aims demonstrate that personal identity formation consists of multiple distinct, but complementary, components. These components are distinct because they are rather weakly associated, likely develop differently across adolescence and young adulthood, and have unique associations with personal and social characteristics. They are complementary as they are all deemed to be part of the formation of the same global personal identity concept and have incremental value in predicting psychosocial functioning. Across time, these different components of identity might strengthen each other. For researchers and practitioners it is thus important to be aware that young people's personal identities comprise multiple components, which have their own characteristics. This main conclusion leads to three key messages.

1. Be Specific, Do Not Make Generalizations Based on Findings Referring to Different Identity Components.

The findings indicate that when and how identity components develop differs, as does their meaning for psychosocial well-being. This implies that findings on one component should not directly be assumed to hold for other components, not even when these components look similar (e.g., different conceptualizations of distinctiveness, or commitments formed in different domains). To draw the right conclusions and implications, it essential to refrain from generalizing findings referring to different components and to specify explicitly and clearly to which specific component one is referring when discussing or studying identity formation.

To achieve this, it is recommended to be consistent in the used terminology when referring to the various components. Thus far, different labels have been used to refer to the same component and the same label has been used to refer to different components. An example of this is the label coherence. The same conceptualization of coherence has also been referred to as self-concept differentiation (Donahue, Robins, Roberts, & John, 1993), spatial integration (Van Hoof & Raaijmakers, 2002), and self-continuity (Dunkel, 2005). Moreover, the label coherence is also used to refer to an adaptive formation of identity commitments (e.g., Chapter 6; Crocetti et al., 2013; Montgomery, Hernandez, & Ferrer-Wreder, 2008). Agreeing on the labels used for different components and their varying conceptualizations (e.g., general and comparative distinctiveness) would not only benefit the findability of studies referring to a specific component, but might also prevent researchers and practitioners to incorrectly generalize findings of one component to another.

2. All Components Need Attention to Foster Adaptive Psychosocial Development in Young People.

That it is important to take the multiple components of personal identity into account was confirmed by the finding that different components – distinctiveness and continuity, or different identity domains – have incremental predictive value. Although some components might have more predictive value than others (e.g., commitment over distinctiveness), the findings do indicate that the components are complementary and each component adds unique value in predicting young people's psychosocial well-being. Young people might thus truly benefit from developing a personal identity characterized by multiple markers of adaptiveness.

This implies that in order to stimulate the formation of this most adaptive personal identity among young people, each component should get attention in practice and in research. Yet, to date, the attention that has been given in research to each identity component has been unequally divided. While the development of

personal continuity has been examined longitudinally, longitudinal studies on distinctiveness or coherence are non-existing or suffering from a lack of power. Furthermore, well-validated measures capturing personal coherence are lacking. It is recommended that these existing gaps on some components be filled in future studies. To stimulate the development of the most adaptive personal identity, gaining information on all components is important.

Furthermore, based on the findings in this thesis, one could state that specific components might need extra attention of practitioners and researchers during specific times. For instance, especially the development of personal continuity might be important during adolescence and young adulthood, and career commitments might need more attention following depressive symptoms and stressful life events. Although the findings indicate that these are indeed normative developments and general longitudinal associations, this does not mean that one should solely focus on the components that are normatively changing during such times. Although continuity seems to be a component that normatively is developing during adolescence and young adulthood, possibly more than distinctiveness, a lack of distinctiveness in individual adolescents and young adults might still be detrimental for their psychosocial development. Lacking general distinctiveness does indicate that one's personal identity is not developed in the most adaptive way, as general distinctiveness did have incremental value over commitment in concurrently predicting young adults' psychosocial well-being. In addition, an extreme lack of distinctiveness, the lack of a rudimentary sense of distinctiveness, has been theorized to result in psychotic symptoms (Kernberg & Caligor, 2005). Moreover, that career commitments generally weaken relatively after negative experiences and interpersonal commitments do not could be caused by the importance of interpersonal commitments during these times. Thus, when a weakening of interpersonal commitments does occur after negative experiences, this could actually require more attention. Future studies should be conducted to examine this possible heterogeneity in developments and its consequences.

3. Looking at the Complete Picture of Personal Identity is Worthwhile.

Adolescents and young adults can score high on one component of an adaptive identity but relatively low on another component. For instance, adolescents can express a high degree of agency within their autobiographical stories or feel distinct from others in general, but still have rather weak commitments. Knowledge on how an adolescent or young adult scores on one component does not tell much about how this person scores on other components. To get a complete picture of young people's personal identities it is thus important for researchers and practitioners to focus on multiple components.

The findings in this thesis have confirmed that taking a more holistic approach is worthwhile. A good understanding of the structure of the global personal identity concept provides important insights for the development of programs that should stimulate adaptive personal identity development among adolescents and young adults. For example, the findings indicate that focusing on the difference between young people and their important others could be harmful and non-effective when attempting to stimulate young people's sense of general distinctiveness. Moreover, the findings suggest that encouraging adolescents to narrate about themselves as agentic in autobiographical stories might result in more adaptive explorations and a strengthening of commitments to their future plans. Solely the understanding of the structure of the global personal concept might thus already indicate which components might yield substantial and progressive effects when being the focus of a prevention or intervention program. Subsequently, this understanding of global personal identity can be combined with knowledge on each specific component. For example, it can be combined with insights on the personal (e.g., depressive symptoms seem to hamper interpersonal commitments) and social (e.g., balanced relatedness in friendships seems to reduce educational identity reconsiderations) characteristics that are of importance for the adaptive development of a specific component. The longitudinal associations between identity components and between identity components and personal and social characteristics revealed in this thesis should first be replicated and further examined in future studies prior to developing intervention program. Nevertheless, the findings indicate that having a good understanding of the global personal identity concept might provide valuable insights for the stimulation of adaptive personal identity formation and psychosocial well-being in young people.

To advance this understanding of the global personal identity concept collaborations between researchers taking different approaches to the study of identity formation are recommended. Although the theoretical ideas and methods developed in the different approaches are not incorrect, integrating ideas and learning from each other is key to understand the full concept of personal identity. Collaborations might result in more knowledge on the associations between the conceptualizations of identity in different approaches, but could also provide information on possible overlap between the components. For example, the degree to which an identity choice is distinctive might be a reason for young people to commit to it. Furthermore, after or while improving instruments measuring each of the components, it might be worthwhile to bring these measures together in one instrument providing information on the status of multiple components of identity. Such a measure would support a more holistic view on personal identity in research and practice.

STRENGTHS, LIMITATIONS, AND FUTURE DIRECTIONS

The work within this thesis has several strengths. First, when possible, the robustness of the findings was examined. Not only cross-sectional hypotheses were examined twice (Chapter 3), but also hypotheses on longitudinal associations (Chapter 5). By examining hypotheses in a second study that differed slightly from the first one (e.g., a different country of residence, a different interval between waves, or deviations in measures), the robustness and possible limitations of the findings were shown. Second, this thesis included various longitudinal studies, spanning 2 to 8 years. With the use of longitudinal data, identity development and its predictors and outcomes was examined. Third, in some studies a multi-method or a multi-informant approach was used. That is, the studies in Chapter 4 included quantitative and qualitative data, and the study in Chapter 6 included reports by adolescents and their best friends. Associations that were tested using a multi-method or multi-informant approach are less likely to be conflated with shared-method-related measurement error.

Nevertheless, there are also some limitations that should be acknowledged and that highlight valuable directions for future research. First, although various components of personal identity formation have been brought together in this thesis, this thesis also leaves some remaining gaps in the empirical knowledge on the conceptualization and characteristics of some components. This primarily concerns the component of personal coherence. The findings showed that similarity between self-perceptions across different domains was not significantly associated with the components of distinctiveness and continuity, nor was it clearly linked with psychosocial functioning. These findings are not in line with the expectation that the component of coherence is part of a more adaptive personal identity that represents the presence of internal reference points, instead of being controlled by external factors (Block, 1961; Erikson, 1968). Possibly, measures focused on similarity in self-perceptions across domains do not represent the sense of (in)coherence that individuals experience, much like comparative distinctiveness was not associated with general distinctiveness, and struggle with. A first alternative for future studies would be to use measures that focus on the degree of conflict that individuals experience between perceived traits of themselves across domains (e.g., caring with friends vs. insconsiderate with family; see Harter & Monsour, 1992). A second alternative would be a coherence measure that focuses not on perceived traits across domains, but on the extent to which individuals feel that their domain-specific identities are in conflict with each other and that they have to put in effort to align these identities. Such a measure could for instance assess the extent to which individuals feel they can express every domain-specific identity across all contexts,

versus feeling pressured to compartmentalize domain-specific identities (e.g., hiding that you want to become an academic researcher for non-nerdy friends; Galliher et al., 2017). Based on the finding that two conceptualizations of one component (i.e., comparative and general distinctiveness) could be unrelated and have different nomological networks, I would recommend future research on coherence to focus not only on associations with psychosocial functioning but also to compare different measures of coherence with each other, for instance the two discussed alternatives. By comparing different conceptualizations of coherence, more knowledge can be gained on the structure of coherence and its nomological network.

Second, I proposed that the three components of an adaptive personal identity are linked across time, based on theory and empirical findings on the developments of the separate components. That is, distinctiveness could be foundational for the development of coherence and continuity, and later all these components could strengthen each other. These longitudinal links have not yet been empirically examined across time. That different components might predict changes in each other was demonstrated in the predictive effect of the degree of agency in adolescents' autobiographical stories on the development of exploration and commitment. This predictive effect was apparent, although the concurrent links between these dimensions were only weak. Future studies should examine whether and how personal distinctiveness, coherence, and continuity are linked across time.

Third, with regard to identity development I have primarily focused on average levels. Although these levels indicate the extent to which identity components have generally been developed (e.g., continuity) or the average engagement in a certain process (e.g., exploration), the information they provide is also limited. For instance, even if all adolescents would remain stable in their degree of general distinctiveness, this does not rule out development in the underlying content of the component of distinctiveness. For all three components, such developments are plausible. Regarding distinctiveness, individuals could extend and further specify their personal identity (adding or adjusting views on similarity and distinctiveness) in a way that equals previous feelings of distinctiveness. Regarding coherence, individuals could add a new domain to their personal identity in a way that matches previous feelings of coherence. Regarding continuity, self-constructed commitments might replace childhood identifications to which one was previously equally committed. Future studies that take the content of personal identity components into account in the examination of development could provide empirical knowledge on *what* develops (McLean et al., 2016).

Fourth, the empirical studies focused primarily on linear associations with psychosocial functioning. As formulated in the review in Chapter 2, the association

between distinctiveness, coherence, and continuity could be curvilinear. That is, extreme high levels of these three components could put individuals at risk for lowered psychosocial functioning. For distinctiveness, theories state that an extreme high sense of distinctiveness could threaten the need to belong (Brewer, 1991; Snyder & Fromkin, 1980). A curvilinear pattern between distinctiveness with psychosocial functioning appeared when reviewing different research findings. An extreme sense of personal continuity could be reflected in a literal sense of continuity (i.e., sameness, not incorporating personal change) and in extremely strong commitments, with individuals being unable to respond to changing circumstances (Kroger, 1996). Regarding coherence, it has been theorized that describing oneself as completely similar across domains would reflect rigidity and inflexibility (Block, 1961). However, if future measures of coherence would focus on the degree of conflict between domains, a linear association with psychosocial functioning would be more likely. The found curvilinear pattern between distinctiveness and psychosocial functioning arose when comparing the results of different studies, using different measures. It seems like measures that are currently mostly used to asses distinctiveness and continuity might not capture the full range of possible levels, with especially the extremely high levels not being assessed. Future research could examine whether items capturing these extreme levels of distinctiveness and continuity could be added to existing measures and whether extremely high levels of otherwise adaptive components of personal identity are linked to lowered psychosocial functioning.

Fifth, the studies in this thesis focused on the periods of adolescence and young adulthood. Sometimes it was possible to test whether findings were similar across adolescence and young adulthood (Chapter 5). Nevertheless, other findings focused on either adolescence or young adulthood, and for most of these findings it has not been tested yet whether they can be generalized to the other developmental period. For example, the relative importance of general distinctiveness for psychosocial well-being might differ between young adults (Chapter 3) and adolescents. That is, general distinctiveness might be more important for adolescents' psychosocial well-being than for young adults because adolescents struggle to gain a sense of autonomy and individuality (Koepke & Denissen, 2012), or it could be less important because adolescents do not want to stand out (Erikson, 1968). Furthermore, identity formation is not finished at the end of young adulthood but is a lifelong task. Although interindividual differences become more stable in adulthood (Meeus, 2011), progressive and regressive developments have been shown to occur in adulthood (Fadjukoff et al., 2005). Consequently, future studies should examine whether the characteristics of components of identity are similar across adolescence, young adulthood, and adulthood.

CONCLUDING REMARKS

Theories and studies on young people's identity formation have identified various components of personal identity formation. Although these components are all assumed to be part of the same developmental task of personal identity formation, they reside largely in separate literatures. In this thesis, these different components were brought together. The findings demonstrate that the different components and processes of young people's identity formation are distinct, because they are only weakly associated, differ in their development, and are uniquely associated with personal and social characteristics in the lives of young people concurrently and across time. Nevertheless, these components are complementary, because they are part of the same global personal identity concept and show incremental value in the prediction of psychosocial well-being. Moreover, the distinct complementary components can inform each other as they could predict each other over time. Consequently, taking into account the multiple components that are part of the bigger identity puzzle is important to see the full picture.

REFERENCES

Adams-Webber, J. (1985). Self-other contrast and the development of personal constructs. *Canadian Journal of Behavioural Science/Revue Canadienne des Sciences du Comportement, 17*, 303-314. doi:10.1037/h0080042

Adler, J. M. (2012). Living into the story: Agency and coherence in a longitudinal study of narrative identity development and mental health over the course of psychotherapy. *Journal of Personality and Social Psychology, 102*, 367-389. doi:10.1037/a0025289

Albarello, F., Crocetti, E., & Rubini, M. (2018). I and us: A longitudinal study on the interplay of personal and social identity in adolescence. *Journal of Youth and Adolescence, 47*, 689-702. doi:10.1007/s10964-017-0791-4

Allen, T. D., Herst, D. E., Bruck, C. S., & Sutton, M. (2000). Consequences associated with work-to-family conflict: A review and agenda for future research. *Journal of Occupational Health Psychology, 5*, 278-308. doi:10.1037/1076-8998.5.2.278

Baird, B. M., Le, K., & Lucas, R. E. (2006). On the nature of intraindividual personality variability: Reliability, validity, and associations with well-being. *Journal of Personality and Social Psychology, 90*, 512-527. doi:10.1037/0022-3514.90.3.512

Block, J. (1961). Ego identity, role variability, and adjustment. *Journal of Consulting Psychology, 25*, 392-397. doi:10.1037/h0042979

Brewer, M. B. (1991). The social self: On being the same and different at the same time. *Personality and Social Psychology Bulletin, 17*, 475-482. doi:10.1177/0146167291175001

Clancy, S. M., & Dollinger, S. J. (1993). Identity, self, and personality: I. Identity status and the five-factor model of personality. *Journal of Research on Adolescence, 3*, 227-245. doi:10.1207/s15327795jra0303_2

Crocetti, E., Branje, S., Rubini, M., Koot, H. M., & Meeus, W. (2017). Identity processes and parent–child and sibling relationships in adolescence: A five-wave multi-informant longitudinal study. *Child Development, 88*, 210-228. doi:10.1111/cdev.12547

Crocetti, E., Klimstra, T. A., Hale, W. W., Koot, H. M., & Meeus, W. (2013). Impact of early adolescent externalizing problem behaviors on identity development in middle to late adolescence: A prospective 7-year longitudinal study. *Journal of Youth and Adolescence, 42*, 1745-1758. doi:10.1007/s10964-013-9924-6

Crocetti, E., Rubini, M., & Meeus, W. (2008). Capturing the dynamics of identity formation in various ethnic groups: Development and validation of a three-dimensional model. *Journal of Adolescence, 31*, 207-222. doi:10.1016/j.adolescence.2007.09.002

Crocetti, E., Scrignaro, M., Sica, L. S., & Magrin, M. E. (2012). Correlates of identity configurations: Three studies with adolescent and emerging adult cohorts. *Journal of Youth and Adolescence, 41*, 732-748. doi:10.1007/s10964-011-9702-2

Donahue, E. M., Robins, R. W., Roberts, B. W., & John, O. P. (1993). The divided self: Concurrent and longitudinal effects of psychological adjustment and social roles on self-concept differentiation. *Journal of Personality and Social Psychology, 64*, 834-846. doi:10.1037/0022-3514.64.5.834

Dunkel, C. S. (2005). The relation between self-continuity and measures of identity. *Identity: An International Journal of Theory and Research, 5*, 21-34. doi:10.1207/s1532706xid0501_2

Dunkel, C. S., Minor, L., & Babineau, M. (2010). The continued assessment of self-continuity and identity. *The Journal of Genetic Psychology, 171*, 251-261. doi:10.1080/00221325.2010.483699

Ebata, A. T., & Moos, R. H. (1991). Coping and adjustment in distressed and healthy adolescents. *Journal of Applied Developmental Psychology, 12*, 33-54. doi:10.1016/0193-3973(91)90029-4

Erikson, E. H. (1968). *Identity: Youth and crisis*. New York, NY: Norton.

Fadjukoff, P., Pulkkinen, L., & Kokko, K. (2005). Identity processes in adulthood: Diverging domains. *Identity, 5*, 1-20. doi:10.1207/s1532706xid0501_1

Galliher, R. V., McLean, K. C., & Syed, M. (2017). An integrated developmental model for studying identity content in context. *Developmental Psychology, 53*, 2011. doi:10.1037/dev0000299

Goossens, L. (2001). Global versus domain-specific statuses in identity research: A comparison of two self-report measures. *Journal of Adolescence, 24*, 681-699. doi:10.1006/jado.2001.0438

Habermas, T., & Köber, C. (2015). Autobiographical reasoning in life narratives buffers the effect of biographical disruptions on the sense of self-continuity. *Memory, 23*, 664-674. doi:10.1080/09658211.2014.920885

Harter, S. (2012). *The construction of the self: Developmental and sociocultural foundations* (2nd ed.). New York, NY: Guilford.

Harter, S., & Monsour, A. (1992). Development analysis of conflict caused by opposing attributes in the adolescent self-portrait. *Developmental Psychology, 28*, 251-260. doi:10.1037/0012-1649.28.2.251

Hatano, K., Sugimura, K., Crocetti, E., & Meeus, W. H. J. (2019). Diverse-and-cynamic pathways in educational and interpersonal identity formation during adolescence: Longitudinal links with psychosocial functioning. *Child Development*. Advance online publication. doi:10.1111/cdev.13301

Helsen, M., Vollebergh, W., & Meeus, W. (1999). Psychosociale problemen in de adolescentie: De samenhang met hechting aan ouders en vrienden en identiteit. *Nederlands Tijdschrift voor de Psychologie en haar Grensgebieden, 54*, 256-275.

Hill, P. L., Edmonds, G. W., & Jackson, J. J. (2019). Pathways linking childhood personality to later life outcomes. *Child Development Perspectives, 13*, 116-120. doi:10.1111/cdep.12322

Hirschi, A. (2012). Vocational identity trajectories: Differences in personality and development of well-being. *European Journal of Personality, 26*, 2-12. doi:10.1002/per.812

Kalakoski, V., & Nurmi, J.-E. (1998). Identity and educational transitions: Age differences in adolescent exploration and commitment related to education, occupation, and family. *Journal of Research on Adolescence, 8*, 29-47. doi:10.1207/s15327795jra0801_2

Kelly, G. A. (1955). *The psychology of personal constructs*. New York, NY: Norton.

Kernberg, O. F., & Caligor, E. (2005). A psychoanalytic theory of personality disorders. In M. F. Lenzenweger & J. F. Clarkin (Eds.), *Major theories of personality disorder* (2nd ed., pp. 114-156). New York, NY: The Guilford Press.

Klimstra, T. A., Hale, W. W., 3rd, Raaijmakers, Q. A. W., Branje, S., & Meeus, W. (2010). Identity formation in adolescence: Change or stability? *Journal of Youth and Adolescence, 39*, 150-162. doi:10.1007/s10964-009-9401-4

Koepke, S., & Denissen, J. J. A. (2012). Dynamics of identity development and separation–individuation in parent–child relationships during adolescence and emerging adulthood: A conceptual integration. *Developmental Review, 32*, 67-88. doi:10.1016/j.dr.2012.01.001

Kroger, J. (1996). Identity, regression and development. *Journal of Adolescence, 19*, 203-222. doi:10.1006/jado.1996.0020

Kunnen, E. (2010). Congruency between domains in commitment development. *Identity: An International Journal of Theory and Research, 10*, 254-269. doi:10.1080/15283488.2010.523321

Luyckx, K., Goossens, L., & Soenens, B. (2006). A developmental contextual perspective on identity construction in emerging adulthood: Change dynamics in commitment formation and commitment evaluation. *Developmental Psychology, 42*, 366-380. doi:10.1037/0012-1649.42.2.366

Luyckx, K., Klimstra, T. A., Duriez, B., Van Petegem, S., Beyers, W., Teppers, E., & Goossens, L. (2013). Personal identity processes and self-esteem: Temporal sequences in high school and college students. *Journal of Research in Personality, 47*, 159-170. doi:10.1016/j.jrp.2012.10.005

Luyckx, K., Klimstra, T. A., Schwartz, S. J., & Duriez, B. (2013). Personal identity in college and the work context: Developmental trajectories and psychosocial functioning. *European Journal of Personality, 27*, 222-237. doi:10.1111/sode.12027

Luyckx, K., Seiffge-Krenke, I., Schwartz, S. J., Crocetti, E., & Klimstra, T. A. (2014). Identity configurations across love and work in emerging adults in romantic relationships. *Journal of Applied Developmental Psychology, 35*, 192-203. doi:10.1016/j.appdev.2014.03.007

McLean, K. C., & Pasupathi, M. (2012). Processes of identity development: Where I am and how I got there. *Identity, 12*, 8-28. doi:10.1080/15283488.2011.632363

McLean, K. C., Syed, M., Pasupathi, M., Adler, J. M., Dunlop, W. L., Drustrup, D., . . . McCoy, T. (2019). The empirical structure of narrative identity: The initial Big Three. *Journal of Personality and Social Psychology*. Advance online publication. doi:10.1037/pspp0000247

McLean, K. C., Syed, M., & Shucard, H. (2016). Bringing identity content to the fore: Links to identity development processes. *Emerging Adulthood, 4*, 356-364. doi:10.1177/2167696815626820

Meeus, W. (2011). The study of adolescent identity formation 2000–2010: A review of longitudinal research. *Journal of Research on Adolescence, 21*, 75-94. doi:10.1111/j.1532-7795.2010.00716.x

Meeus, W., Van de Schoot, R., Keijsers, L., & Branje, S. (2012). Identity statuses as developmental trajectories: A five-wave longitudinal study in early-to-middle and middle-to-late adolescents. *Journal of Youth Adolescence, 41*, 1008-1021. doi:10.1007/s10964-011-9730-y

Mercer, N., Crocetti, E., Branje, S., Van Lier, P., & Meeus, W. (2017). Linking delinquency and personal identity formation across adolescence: Examining between-and within-person associations. *Developmental Psychology, 53*, 2182-2194. doi:10.1037/dev0000351

Merrill, N., Waters, T. E., & Fivush, R. (2016). Connecting the self to traumatic and positive events: Links to identity and well-being. *Memory, 24*, 1321-1328. doi:10.1080/09658211.2015.1104358

Montgomery, M. J., Hernandez, L., & Ferrer-Wreder, L. (2008). Identity development and intervention studies: The right time for a marriage? *Identity: An International Journal of Theory and Research, 8,* 173-182. doi:10.1080/15283480801940115

Pasupathi, M. (2014). Identity development: Dialogue between normative and pathological developmental approaches. *Journal of Personality Disorders, 28*, 113-120. doi:10.1521/pedi.2014.28.1.113

Pasupathi, M., Mansour, E., & Brubaker, J. R. (2007). Developing a life story: Constructing relations between self and experience in autobiographical narratives. *Human Development, 50*, 85-110. doi:10.1159/000100939

Pilarska, A. (2014). Self-construal as a mediator between identity structure and subjective well-being. *Current Psychology, 33*, 130-154. doi:10.1007/s12144-013-9202-5

Pilarska, A., & Suchańska, A. (2015a). The identity processes and the sense of identity: Interrelations and significance to the capacity for closeness. *Studia Psychologiczne, 53*, 87-100. doi:10.2478/V1067-010-0142-3

Pilarska, A., & Suchańska, A. (2015b). Self-complexity and self-concept differentiation–What have we been measuring for the past 30 years? *Current Psychology, 34*, 723-743. doi:10.1007/s12144-014-9285-7

Roberts, B. W., O'Donnell, M., & Robins, R. W. (2004). Goal and personality trait development in emerging adulthood. *Journal of Personality and Social Psychology, 87*, 541-550. doi:10.1037/0022-3514.87.4.541

Schwartz, S. J., Côté, J. E., & Arnett, J. J. (2005). Identity and agency in emerging adulthood: Two developmental routes in the individualization process. *Youth and Society, 37*, 201-229. doi:10.1177/0044118X05275965

Shadel, W. G., Niaura, R., & Abrams, D. B. (2004). Who am I? The role of self-conflict in adolescents' responses to cigarette advertising. *Journal of Behavioral Medicine, 27*, 463-475. doi:10.1023/B:JOBM.0000047610.07195.b0

Shadel, W. G., Tharp-Taylor, S., & Fryer, C. S. (2008). Exposure to cigarette advertising and adolescents' intentions to smoke: The moderating role of the developing self-concept. *Journal of Pediatric Psychology, 33*, 751-760. doi:10.1093/jpepsy/jsn025

Shadel, W. G., Tharp-Taylor, S., & Fryer, C. S. (2009). How does exposure to cigarette advertising contribute to smoking in adolescents? The role of the developing self-concept and identification with advertising models. *Addictive Behaviors, 34*, 932-937. doi:10.1016/j.addbeh.2009.05.014

Shirai, T., Nakamura, T., & Katsuma, K. (2016). Identity development in relation to time beliefs in emerging adulthood: A long-term longitudinal study. *Identity: An International Journal of Theory and Research, 16*, 45-58. doi:10.1080/15283488.2015.1121817

Snyder, C. R., & Fromkin, H. L. (1980). *Uniqueness: The human pursuit of difference*. New York, NY: Plenum Press.

Thoits, P. A. (1983). Multiple identities and psychological well-being: A reformulation and test of the social isolation hypothesis. *American Sociological Review, 48*, 174-187. doi:10.2307/2095103

Updegraff, J. A., & Taylor, S. E. (2000). From vulnerability to growth: Positive and negative effects of stressful life events. In J. Harvey & E. Miller (Eds.), *Loss and trauma: General and close relationship perspectives* (pp. 3-28). Philadelphia, PA: Brunner-Routledge.

Van Hoof, A., & Raaijmakers, Q. A. W. (2002). The spatial integration of adolescent identity: Its relation to age, education, and subjective well-being. *Scandinavian Journal of Psychology, 43*, 201-212. doi:10.1111/1467-9450.00288

Yoder, A. E. (2000). Barriers to ego identity status formation: A contextual qualification of Marcia's identity status paradigm. *Journal of Adolescence, 23*, 95-106. doi:10.1006/jado.1999.0298

APPENDIX –

SUMMARY

The development of a personal identity, answering the question 'who am I?', is a key developmental task in adolescence and young adulthood. Constructing an own personal identity is important for the psychosocial development of young people. Existing studies on personal identity development can be divided into separate approaches that each focus on different components. Unfortunately, these approaches have only scarcely been integrated with each other in empirical work. It seems like groups of researchers are predominantly working on parallel parts of the identity puzzle and are less focused on bringing these pieces together. Bringing these pieces together is important, because the different approaches together would form a more complete picture of the structure and development of personal identity and of the importance of different identity components for the psychosocial well-being of young people. This thesis focuses on the integration of these different identity components.

Three components of a healthy personal identity have previously been identified: personal *distinctiveness* from others, personal *coherence* across different domains (e.g., school and home) and personal *continuity* across time. **Chapter 2** provides an overview of previous studies on these components in adolescence or young adulthood. The findings show that a stronger feeling of distinctiveness is related to better psychosocial functioning, but that an extreme feeling of distinctiveness is related to reduced psychosocial functioning. Possibly, an extreme feeling of distinctiveness is not adaptive because this hampers feelings of belongingness. The degree to which adolescents and young adults feel distinct was not associated with age, which suggests that distinctiveness develops generally already prior to adolescence. Regarding coherence, there was no strong evidence for an association with psychosocial functioning. This might be caused by the precise conceptualization of coherence that has been used previously. Possibly, it is not so much the similarity between self-perceptions across identity domains that matters, as the extent to which someone experiences conflicts between these domains. Studies with sufficient sample sizes on the development of coherence are lacking. More research has been conducted on continuity, and in particular commitments. Strong commitments are firm choices in domains like education and interpersonal relationships and provide certainty with regard to the future. Strong commitments are related to better psychosocial functioning. How strong young people are committed remains fairly stable during adolescence and young adulthood. Nevertheless, findings do point towards a slight average strengthening of commitments. Based on these findings, an integrative framework on the development of these three components is provided. Distinctiveness could form the

foundation from which identity coherence and continuity can develop. Subsequently, all components might strengthen each other. The three components could all provide unique value in explaining and predicting young people's psychosocial functioning.

Distinctiveness has often been conceptualized and studied in two different ways. *Comparative distinctiveness* refers to the degree to which individuals' self-perceptions deviate from their perceptions of specific others, as calculated by researchers. *General distinctiveness* refers to a feeling of uniqueness from others in general, as judged by individuals themselves. In **Chapter 3,** these two conceptualizations are compared to each other and to commitment strength with regard to future plans, a proven strong marker of healthy identity formation. The findings from two samples of Dutch and American young adults show that comparative and general distinctiveness are not associated and differ in their associations with various indicators of psychosocial well-being. Perceiving more differences between oneself and personally important others (comparative distinctiveness) is associated with decreased social well-being. In contrast, a stronger feeling of general distinctiveness is associated with a diverse range of indicators of better psychosocial well-being. The associations of general distinctiveness with psychosocial well-being resemble those of commitment. However, for some indicators commitment is a stronger concurrent predictor than general distinctiveness. Nevertheless, the findings show that general distinctiveness has added value in the concurrent prediction of some indicators of psychosocial well-being. Additionally, the findings show that feelings of general distinctiveness cannot be directly derived from perceived differences between the self and others. Probably, the importance of differences is weighed in varying ways when individuals themselves aggregate them in a general feeling of distinctiveness. To sum up, commitment shows to be a stronger marker of healthy personal identity formation in young adulthood, but a more complete picture arises when general distinctiveness is also taken into account.

The development of personal identity has been conceptualized and studied in different ways by the *narrative* and the *dual-cycle* approach. The narrative approach focuses on the construction of a personal life story, which is examined by studying autobiographical stories. The dual-cycle approach focuses on the exploration and strength of commitments, which is examined with the use of questionnaires. **Chapter 4** demonstrates that key characteristics of both approaches are associated with each other, but only weakly. Adolescents who are able to connect an experienced event to an aspect of themselves within an autobiographical story (i.e., autobiographical reasoning) have somewhat stronger commitments towards their future plans than adolescents who do not make these connections. Moreover, they

engage more in the exploration of possible choices (i.e., exploration in breadth) and their current choices (i.e., exploration in depth). The degree to which adolescents told they had influence over the course of events (i.e., agency) was positively associated with the strength and exploration of current commitments (i.e., exploration in depth). In addition, it was examined whether characteristics of autobiographical stories are predictive of developments in commitment and exploration across the next 2 years. The findings show that on average commitment remained stable and exploration increased across middle adolescence. Adolescents who told an autobiographical story in which they themselves had influence on the course of events (i.e., agency) more often experienced a strengthening of commitments and a stronger increase in the exploration of possible and current commitments (i.e., exploration in breadth and in depth). Together these findings show that the narrative and dual-cycle approach capture different aspects of the identity formation process that are complementary and can inform each other.

Young people form commitments in various domains, such as the *career* (education and work) and the *interpersonal* (friends and romantic relationships) domains. In **Chapter 5** it was examined with the use of two large longitudinal studies how these domain-specific commitments are associated with experiencing depressive symptoms and stressful life events. Findings from both studies indicated that stronger career commitments are predictive of experiencing relatively less stressful life events. Strong career commitments might function as a compass, resulting in for instance less risk taking. Stronger interpersonal commitments were only predictive of a relative decrease in depressive symptoms. Conversely, experiencing more depressive symptoms and stressful life events was predictive of a relative weakening of career commitments. Possibly, the strength of interpersonal commitments does not weaken during or after these negative experiences, because of their importance during these difficult periods. Together the findings show that domain-specific commitments differ in how they are related to young people's negative experiences.

Different processes are involved in the construction of commitments: the strength of *commitments*, *exploring* the meaning of current commitments *in depth*, and *reconsidering* whether alternatives are better. In **Chapter 6,** it was examined how each of these processes of the formation of an educational identity are associated with characteristics of adolescents' best friends. Friendships are thought to be highly important for adolescents' personal identity formation. The findings of the longitudinal study indicate that best friends' processes of constructing educational commitments are not associated. Thus, when adolescents are for instance repeatedly reconsidering whether a current educational commitment is the right one this does not spill over to their best friends. In contrast, the degree to which

adolescents perceive their best friend to accept differing opinions or ideas was associated with educational identity formation. Adolescents in friendships that were characterized by this acceptance experienced a relative decrease in educational reconsiderations. Conversely, the degree of perceived acceptance of differing opinions increased when adolescents were more strongly committed to their educational choices (in late adolescence) and when they explored these choices more in depth. Consequently, friendships are associated with the formation of personal identity, but the precise association differs per identity process.

Together the findings in the various chapters show that personal identity consists of multiple distinct, but complementary, components. These components are distinct, because they are barely associated with each other, differ in their development, and are differently associated with personal and social characteristics of young people. These components are complementary, because they are part of the same global personal identity concept and of added value in explaining associations of personal identity with personal and social characteristics. Across time, these distinct complementary components can predict each other. The findings highlight that it is risky to make generalizations based on findings referring to different identity components. Furthermore, the findings show that to stimulate healthy personal identity formation in young people and psychosocial well-being each personal identity component needs attention. Moreover, a complete picture of young people's personal identities requires the consideration of multiple components. To conclude, taking into account the multiple components that are part of the bigger identity puzzle is important to see the full picture.

SAMENVATTING

De ontwikkeling van een persoonlijke identiteit, het beantwoorden van de vraag 'Wie ben ik?', is een van de kerntaken in de ontwikkeling voor adolescenten en jongvolwassenen. Het vormen van een eigen persoonlijke identiteit is belangrijk voor de psychosociale ontwikkeling van jongeren. Bestaand onderzoek naar persoonlijke identiteitsontwikkeling kan worden onderverdeeld in verschillende benaderingen die ieder focussen op andere componenten. Helaas zijn deze verschillende benaderingen maar zelden geïntegreerd in empirisch onderzoek. Het lijkt er op dat afzonderlijke groepen van onderzoekers voornamelijk parallel werken aan verschillende stukken van de identiteitspuzzel en minder gefocust zijn op het samenbrengen. Het samenbrengen is echter wel belangrijk, omdat de verschillende benaderingen samen een beter beeld vormen van de structuur en ontwikkeling van persoonlijke identiteit en het belang van verschillende identiteitscomponenten voor het psychosociale welzijn van jongeren. In dit proefschrift staat deze integratie van verschillende identiteitscomponenten centraal.

In de literatuur komen drie componenten van een gezonde persoonlijke identiteit naar voren: persoonlijke *uniekheid* ten opzichte van anderen, persoonlijke *coherentie* tussen verschillende domeinen (bijvoorbeeld school en thuis) en persoonlijke *continuïteit* over tijd. **Hoofdstuk 2** biedt een overzicht van eerdere onderzoeken naar deze componenten in adolescentie of jongvolwassenheid. De bevindingen tonen dat een sterker gevoel van uniekheid gepaard gaat met beter psychosociaal functioneren, maar dat bij een extreem gevoel van uniekheid juist vaker sprake is van verminderd psychosociaal functioneren. Een extreem gevoel van uniekheid is wellicht zorgelijk omdat dit een gevoel van verbondenheid met anderen belemmert. De mate waarin adolescenten en jongvolwassenen zich uniek voelen is niet gerelateerd aan leeftijd en ontwikkelt zich dus wellicht doorgaans al voor de adolescentie. Wat betreft coherentie ontbreekt sterk bewijs voor een verband met psychosociaal functioneren. De precieze gebruikte conceptualisatie van coherentie kan hiervan de oorzaak zijn. Voor het psychosociaal functioneren is het wellicht niet zozeer van belang of een individu zich als hetzelfde ziet over identiteitsdomeinen, als wel of een individu conflicten tussen deze domeinen ervaart. Onderzoeken met steekproeven van voldoende grootte naar de ontwikkeling van coherentie ontbreken. Meer onderzoek is gedaan naar continuïteit en in het bijzonder naar commitments. Sterke commitments zijn vastbesloten keuzes in domeinen als opleiding en relaties en bieden zekerheid voor de toekomst. Sterke commitments gaan gepaard met beter psychosociaal functioneren. Hoe sterk jongeren gecommitteerd zijn is gedurende de adolescentie en jongvolwassenheid

redelijk stabiel. Toch duiden bevindingen ook op een algemene lichte toename in de sterkte van commitments. Op basis van deze bevindingen wordt een integratief kader voor de ontwikkeling van de drie componenten geschetst. Uniekheid vormt wellicht het fundament voor de ontwikkeling van coherentie en continuïteit, waarna de drie componenten elkaar versterken. De drie componenten zouden allen een unieke waarde kunnen hebben in het verklaren en voorspellen van het psychosociaal functioneren van jongeren.

Uniekheid wordt vaak geconceptualiseerd en onderzocht op twee verschillende wijze. *Comparatieve uniekheid* verwijst naar de mate waarin de zelf-perceptie afwijkt van de perceptie die een persoon heeft van specifieke anderen, berekend door onderzoekers. *Algemene uniekheid* verwijst naar een gevoel van uniekheid ten opzichte van anderen in het algemeen, beoordeeld door de persoon zelf. In **Hoofdstuk 3** worden deze twee conceptualisaties met elkaar vergeleken en met de mate van commitment ten opzichte van toekomstplannen, een bewezen sterke marker van gezonde identiteitsontwikkeling. De bevindingen in twee steekproeven met Nederlandse en Amerikaanse studenten tonen dat comparatieve en algemene uniekheid niet aan elkaar gerelateerd zijn en verschillend samenhangen met indicatoren van psychosociaal welzijn. Grote verschillen zien tussen jezelf en persoonlijk belangrijke anderen (comparatieve uniekheid) gaat gepaard met verminderd sociaal welzijn. Een sterk gevoel van algemene uniekheid daarentegen hangt samen met diverse indicatoren van hoger psychosociaal welzijn. Algemene uniekheid lijkt wat betreft de samenhang met psychosociaal welzijn op commitment. Commitment hangt echter wel sterker samen met sommige indicatoren van psychosociaal welzijn dan algemene uniekheid. Desondanks tonen de bevindingen dat algemene uniekheid van toegevoegde waarde is in het voorspellen van het huidig psychosociaal functioneren. Op basis van deze bevindingen kan gesteld worden dat gevoelens van algemene uniekheid niet direct af te leiden zijn uit hoe individuen zichzelf en anderen waarnemen. Wellicht wegen individuen het ene verschil zwaarder dan het andere wanneer zij het samenvoegen tot een algemeen gevoel van uniekheid. Verder is commitment een sterke marker van een gezonde persoonlijke identiteit in de jongvolwassenheid, maar ontstaat een volledig beeld door ook rekening te houden met het gevoel van algemene uniekheid.

De ontwikkeling van persoonlijke identiteit wordt op verschillende wijze beschreven en onderzocht in de *narratieve* en de *dual-cycle* benadering. De narratieve benadering focust op het construeren van een persoonlijk levensverhaal en onderzoekt dit aan de hand van autobiografische verhalen. De dual-cycle benadering focust op de exploratie en sterkte van commitments en onderzoekt dit aan de hand van vragenlijsten. **Hoofdstuk 4** toont dat belangrijke kenmerken uit

beide benaderingen met elkaar samenhangen, maar slechts zwak. Adolescenten die in een autobiografisch verhaal een ervaren gebeurtenis kunnen koppelen aan een aspect van henzelf (autobiografisch redeneren) hebben iets sterkere commitments wat betreft hun toekomstplannen dan adolescenten die deze koppeling niet maken. Ook exploreren zij meer welke mogelijke keuzes er zijn (exploratie in de breedte) en wat de betekenis is van gemaakte keuzes (exploratie in de diepte). Daarnaast hangt de mate waarin adolescenten vertellen invloed te hebben op het verloop van een gebeurtenis (agency) positief samen met de sterkte van commitments en de exploratie van deze commitments (exploratie in de diepte). Verder is onderzocht of kenmerken van autobiografische verhalen voorspellend zijn voor de ontwikkeling van commitments en exploratie gedurende de volgende 2 jaar. De bevindingen tonen dat gemiddeld genomen commitments even sterk blijven en exploratie toeneemt in de midden adolescentie. Adolescenten die in een autobiografisch verhaal vertelden invloed te hebben gehad op het verloop van een gebeurtenis (agency) ervoeren vaker een toename in de sterkte van commitments en een sterkere toename in de exploratie van mogelijke en huidige commitments (exploratie in de breedte en in de diepte). Al deze bevindingen tonen dat de narratieve en dual-cycle benadering verschillende aspecten van persoonlijke identiteitsontwikkeling naar voren brengen die complementair zijn en elkaar kunnen informeren.

Jongeren vormen commitments in verschillende domeinen, zoals de domeinen *carrière* (opleiding en werk) en *interpersoonlijke relaties* (vrienden en romantische relaties). In **Hoofdstuk 5** werd aan de hand van twee grote longitudinale studies onderzocht hoe deze twee domein-specifieke commitments samenhangen met het ervaren van depressieve symptomen en stressvolle levensgebeurtenissen. Bevindingen uit beide studies tonen dat sterkere carrière commitments voorspellend zijn voor het ervaren van relatief minder stressvolle levensgebeurtenissen. Sterke carrière commitments functioneren wellicht als een kompas, waarbij jongeren bijvoorbeeld minder risico's nemen. Interpersoonlijke commitments daarentegen waren juist voorspellend voor relatief minder depressieve symptomen. Omgekeerd voorspelden het ervaren van meer depressieve symptomen en stressvolle gebeurtenissen enkel een afname in de sterkte van carrière commitments. Interpersoonlijke commitments worden wellicht doorgaans niet zwakker tijdens deze moeilijke tijden, omdat ze juist op deze momenten belangrijk zijn. Alle bevindingen samen tonen dat commitments in verschillende domeinen op afwijkende wijze samenhangen met negatieve ervaringen van jongeren.

Bij het vormen van commitments zijn verschillende processen betrokken: de mate van *commitment*, *in de diepte exploreren* van wat deze commitment inhoudt en

heroverwegen of alternatieven wellicht beter zijn. In **Hoofdstuk 6** werd onderzocht hoe ieder van deze processen bij het vormen van schoolse commitments gelinkt zijn aan kenmerken van de beste vriend(in) van adolescenten. Vriendschappen worden namelijk verondersteld van groot belang te zijn bij het vormen van een eigen persoonlijke identiteit in de adolescentie. De bevindingen van de longitudinale studie tonen dat bij beste vrienden de processen bij het vormen van schoolse commitments elkaar niet voorspellen. Het is dus bijvoorbeeld niet zo dat wanneer adolescenten herhaaldelijk heroverwegen of de huidige schoolse commitment wel de juiste is dat hun beste vriend(in) dit overneemt. Wat wel verbonden leek met de vorming van schoolse identiteit was de mate waarin adolescenten meenden dat hun beste vriend(in) het accepteert wanneer zij aangeven een andere mening of visie te hebben. Bij adolescenten in vriendschappen waarbij hier meer sprake van was namen de heroverwegingen over hun schoolse identiteit relatief af. Andersom, nam de mate van waargenomen acceptatie van meningsverschillen toe wanneer adolescenten sterker gecommitteerd waren aan hun schoolse identiteit (in de late adolescentie) en deze commitments meer in de diepte exploreerden. Vriendschap lijkt dus verbonden te zijn met de vorming van persoonlijke identiteit, maar het precieze verband verschilt per identiteitsproces.

Samen tonen de bevindingen in de verschillende hoofdstukken aan dat persoonlijke identiteit bestaat uit verschillende complementaire componenten. Deze componenten zijn verschillend, aangezien ze nauwelijks met elkaar samenhangen, verschillen in hun ontwikkeling en op verschillende wijze samenhangen met persoonlijke en sociale factoren in de levens van jongeren. Deze componenten zijn complementair, omdat ze onderdeel zijn van een groter concept van persoonlijke identiteit en omdat ze van toegevoegde waarde zijn in het verklaren van de samenhang met persoonlijke en sociale factoren. Deze verschillende complementaire componenten kunnen elkaar voorspellen. De bevindingen tonen aan dat het gevaarlijk is om bevindingen met betrekking tot één component te generaliseren naar andere componenten. Verder geven de bevindingen aan dat het voor de bevordering van de persoonlijke identiteitsontwikkeling van jongeren en hun psychosociale welzijn van belang is om aan ieder component aandacht te besteden. Persoonlijke identiteitsontwikkeling wordt het meest volledig weergegeven wanneer gekeken wordt naar meerdere componenten. Concluderend kan gesteld worden dat het van belang is om alle verschillende componenten die onderdeel zijn van de identiteitspuzzel in beschouwing te nemen om een volledig beeld van de persoonlijke identiteitsontwikkeling van jongeren te krijgen.

ACKNOWLEDGEMENTS

Velen hebben bijgedragen aan dit proefschrift! Allereerst waren dit alle jongeren die hebben deelgenomen aan de verschillende studies. Veel dank voor het (herhaaldelijk) delen van jullie commitments, uniekheid en autobiografische verhalen. Jullie deelname maakt wetenschappelijk onderzoek mogelijk. Verder heb ik tijdens het schrijven van dit proefschrift het geluk gehad om te mogen samenwerken met een aantal geweldige mensen.

Theo, het was een voorrecht om een promotietraject gericht op identiteitsontwikkeling onder jouw altijd optimistische supervisie te mogen voltooien. Wat een geluk voor mij dat jij precies op het juiste moment een Vidi binnenhaalde om Project-IK mogelijk te maken. Je hebt een enorme kennis over identiteit en een nieuwsgierigheid naar verschillende benaderingen om de ontwikkeling hiervan te onderzoeken. Daarnaast ben je niet voor niets bekroond als Outstanding Mentor. Altijd dacht je met plezier mee over hoe mogelijke verbanden tot stand zouden kunnen komen en over nieuwe mogelijkheden voor mij om me als onderzoeker verder te ontwikkelen.

Wim, jouw kennis over en ervaring met het onderzoeken van identiteitsontwikkeling bij jongeren hielp om tijdens het werken aan de specifieke studies het grotere plaatje te blijven zien. Altijd had je ideeën over hoe verder te gaan en tegelijkertijd bood je altijd ruimte voor ideeën vanuit mij. Jaap, jouw vernieuwende ideeën en enthousiasme over wetenschappelijk onderzoek hebben er zeker mede voor gezorgd dat het publiceren van de verschillende hoofdstukken zo goed gelukt is. Jij motiveerde me om tot aan het einde van iedere publicatie kritisch te blijven. Theo, Wim en Jaap, onze afspraken met z'n vieren heb ik altijd als stimulerend ervaren. Ik heb genoten van ieders eigen visie en de fijne dynamiek. Dank hiervoor!

Mijn dankbaarheid gaat uit naar alle andere onderzoekers die aan de diverse hoofdstukken hebben bijgedragen en twee in het bijzonder. Susan, bedankt voor de mooie kansen die jij mij tijdens mijn bachelor en master bood om me te verdiepen in identiteitsontwikkeling en de begeleiding bij mijn eerste stappen in het publiceren van een studie. Kate, thank you for introducing me to the study of narrative identity. It was a pleasure to learn how to code and use this fascinating type of data from a passionate expert like you.

Mijn dank gaat uit naar alle studenten en het doorzettingsvermogen van Sophie waardoor de dataverzameling van Project-IK en het coderen van alle autobiografische verhalen mogelijk werd. Sophie, scholen door heel Brabant bezoeken en duizend verhalen coderen, samenwerken met jou was altijd gezellig!

I would like to thank committee members dr. Byron G. Adams, dr. E. Saskia Kunnen, dr. Koen Luyckx, prof. dr. Inge Seiffge-Krenke, and prof. dr. Sander Thomaes for their willingness to use their knowledge and expertise to assess this thesis.

Of course, I also would like to thank my inspiring, bright, and/or crazy (former) colleagues who make it extra fun to do research in the field of developmental psychology. Thanks for making me laugh or laughing at my "jokes" during lunches at 12. Thanks for being wonderful roommates in buildings P and/or S. Thanks for making conferences even more fun at beaches in Spain, in the snow of Minneapolis, at a fair in Groningen, in a caravan in Ghent, or while eating pizza in Napoli. And thanks for making it possible for me to keep doing research in this intriguing field in the future.

Tot slot wil ik de lieve Rosan en Amy bedanken voor hun steun op het podium terwijl ik dit proefschrift verdedig, mijn ouders die me altijd steunen en de liefste Rob die sowieso geweldig is.

ABOUT THE AUTHOR

Lotte van Doeselaar obtained her bachelor's degree in Psychology at Utrecht University in 2012. During her bachelor, she was already fascinated by the phase between childhood and adulthood and the related developmental tasks, and participated in a two-week intensive Erasmus program on identity formation in the context of globalization in Ankara. After her bachelor, Lotte combined the Research Master Development and Socialization in Childhood and Adolescence (DaSCA) with the clinical Master Child and Youth Psychology. During this time, she wrote her master's thesis on the role of best friends in educational identity formation under supervision of prof. dr. Susan J.T. Branje. Furthermore, she worked as an intern in the diagnostic unit of the Centre of Adolescent Psychiatry from the Reinier van Arkel groep with 16 to 23 year olds with complex mental problems.

In September 2015, she became a PhD candidate at the department of Developmental Psychology at Tilburg University supervised by dr. Theo A. Klimstra, prof. dr. Jaap J.A. Denissen, and prof. dr. Wim H.J. Meeus. Here she was actively involved in setting up, coordinating, and executing the data collection of the 3-year longitudinal study Project-Me. Additionally, she set up two extra studies among Dutch and US students to examine the concept of distinctiveness. Moreover, she was trained by prof. dr. Kate C. McLean from Western Washington University to code narrative data and subsequently trained various bachelor and master students at Tilburg University to code this type of data. During her time as a PhD candidate, she organized several symposia and presented studies at national and international conferences. She published her master's thesis and four other papers as a first author (all included in this thesis) and co-authored a book chapter on identity formation. In addition to her research, Lotte was involved in various teaching activities, such as supervising master's theses, tutoring first-year psychology students, and teaching various workgroups in the Psychology bachelor program.

Currently, Lotte is a postdoctoral researcher and teacher at the department of Developmental Psychology at Tilburg University. Together with dr. Anne K. Reitz she will continue to examine identity formation and the broader self-concept in young adults making the transition from school to work.

LIST OF PUBLICATIONS

* Van Doeselaar, L., McLean, K. C., Meeus, W., Denissen, J. J. A., & Klimstra, T. A. (2019). Adolescents' identity formation: Linking the narrative and the dual-cycle approach. *Journal of Youth and Adolescence.* Advance online publication. https://doi.org/10.1007/s10964-019-01096-x

* Van Doeselaar, L., Klimstra, T. A., Denissen, J. J. A., & Meeus, W. (2019). Distinctiveness as a marker of identity formation. *Journal of Research in Personality, 78,* 153-164. https://doi.org/10.1016/j.jrp.2018.12.002

* Van Doeselaar, L., Becht, A. I., Klimstra, T. A., & Meeus, W. H. J. (2018). A review and integration of three key components of identity development: Distinctiveness, coherence, and continuity. *European Psychologist, 23*, 278-288. https://doi.org/10.1027/1016-9040/a000334

* Van Doeselaar, L., Klimstra, T. A., Denissen, J. J. A., Branje, S., & Meeus, W. (2018). The role of identity commitments in depressive symptoms and stressful life events in adolescence and young adulthood. *Developmental Psychology*, *54*, 950-962. https://doi.org/10.1037/dev0000479

Klimstra, T. & **Van Doeselaar, L.** (2017). Identity formation in adolescence and young adulthood. In J. Specht (Ed.), *Personality development across the lifespan*. San Diego, CA: Elsevier.

* Van Doeselaar, L., Meeus, W., Koot, H. M., & Branje, S. (2016). The role of best friends in educational identity formation in adolescence. *Journal of Adolescence, 47,* 28-37. https://doi.org/10.1016/j.adolescence.2015.12.002

Wagner, L., Conrad, D., Gajić, N., Kácha, O., Martinović, K., Skortsova, A., **Van Doeselaar, L.**, & Voitenko, D. (2014). Examining adolescents' well-being: How do the orientations to happiness relate to their free time activities? *Journal of European Psychology Students, 5,* 8-12. https://doi.org/10.5334/jeps.bv

* Included in this PhD thesis